



FORUM



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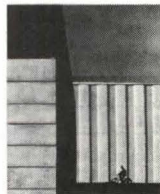
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(Above) Patterson Office Tower and White Classroom Building. Architects: Johnson-Romanowitz, Lexington. General Contractor: Foster & Creighton Company, Lexington. Six Dover gearless traction elevators with Computamatic IV Control.

(Right) Agricultural Science Building One. Architects: McCulloch & Bickel, Louisville. General Contractor: Foster & Creighton Co., Lexington. Two Dover Oilraulic Elevators with Duplex Control.

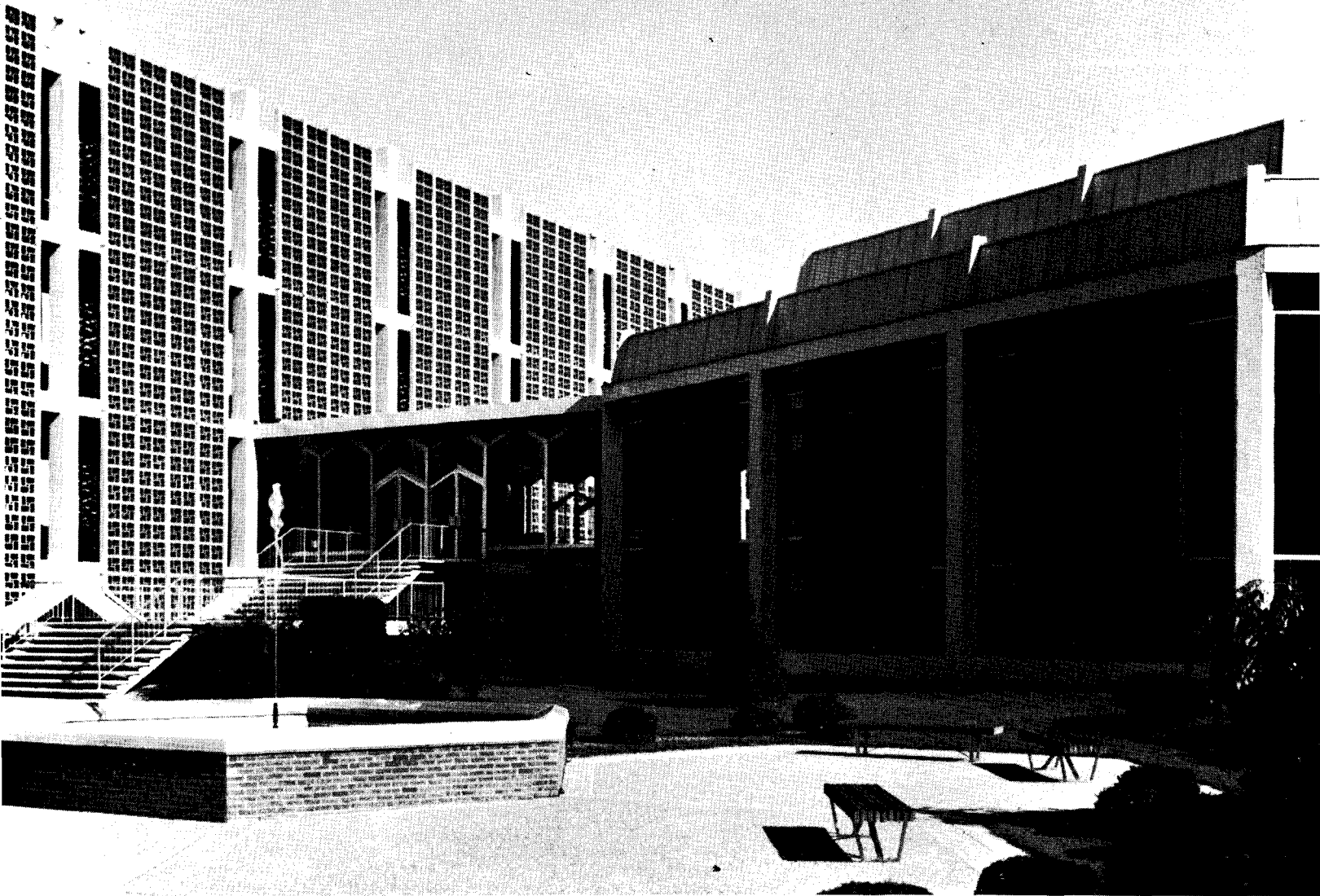


Dover delivers
53 elevators for 29
buildings at the
University of Kentucky

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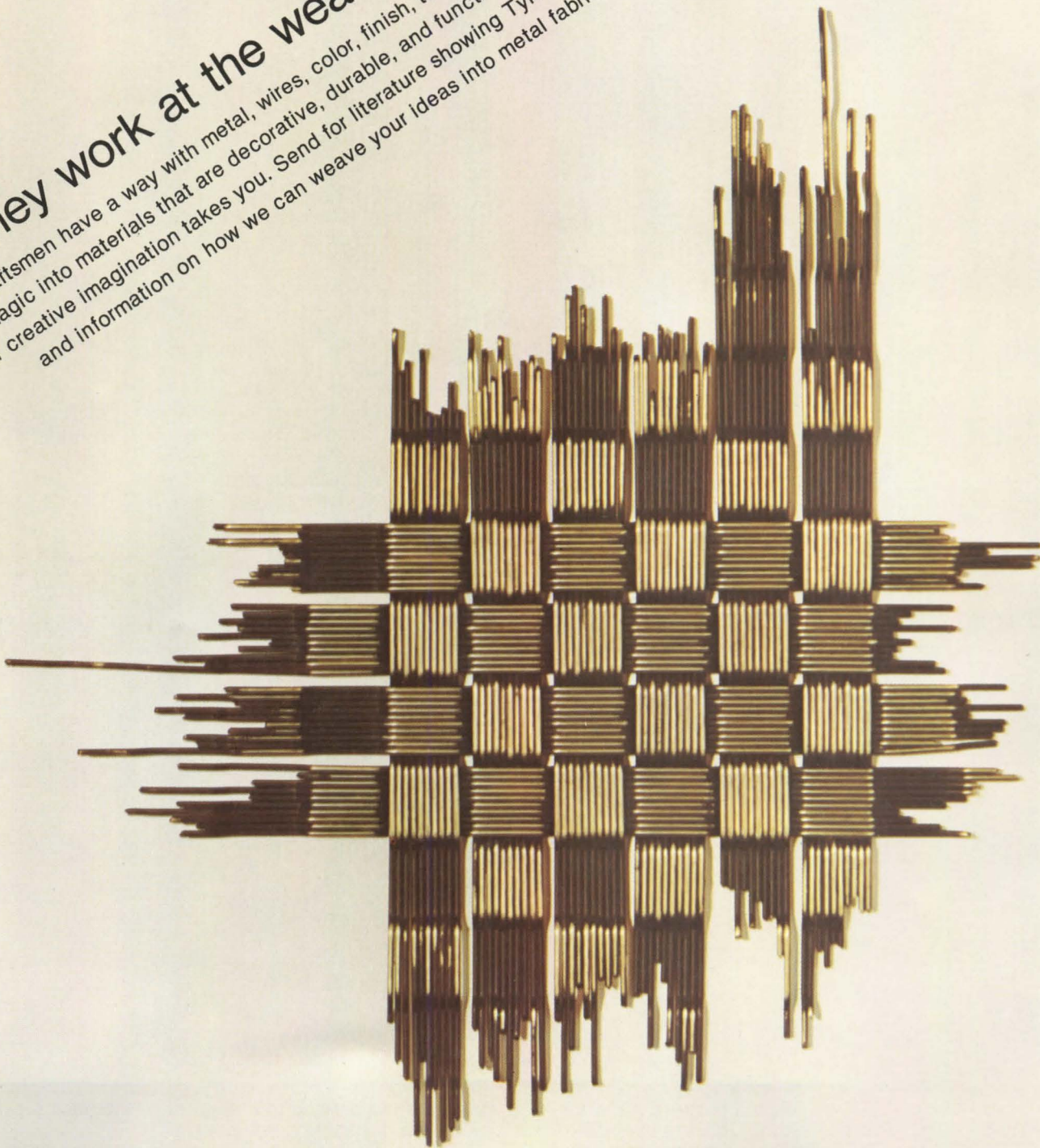
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the elevator innovators

They work at the weaver's trade

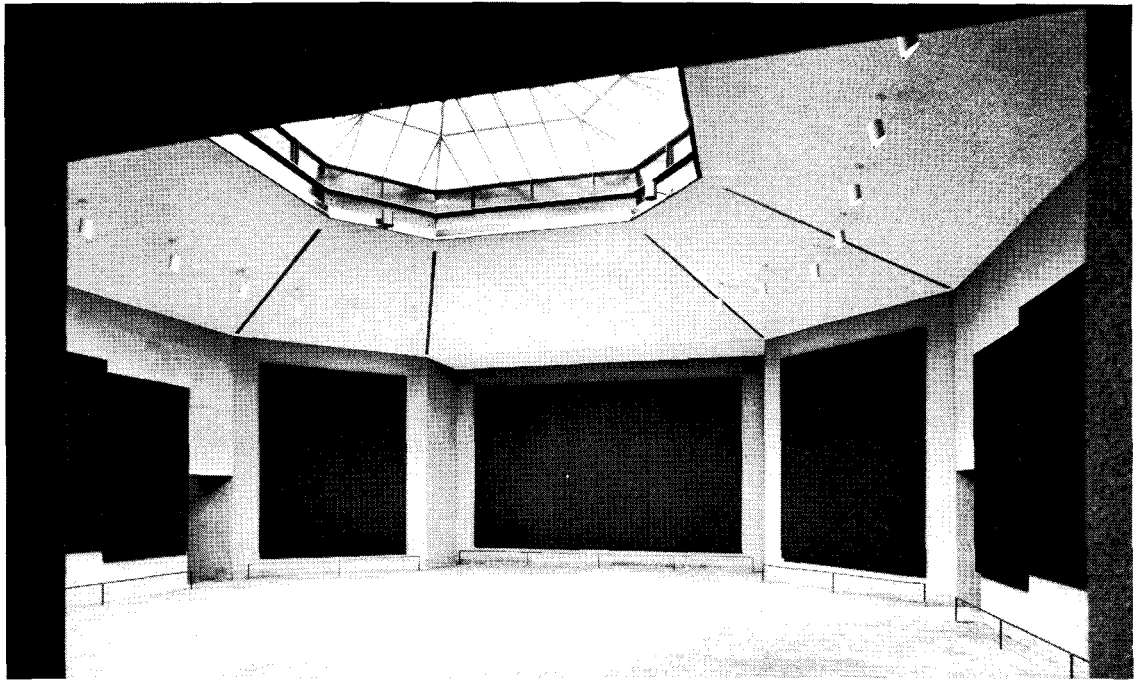
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SHADES OF RED AND BLACK

Houston's Rothko Chapel, designed by Howard Barnstone and Eugene Aubry, is dedicated to the celebration of all religions and to the work of a single artist, the late American abstractionist Mark Rothko. Fourteen Rothko paintings dominate the chapel interior with subtle shadings of deep red and black, the latter becoming greenish at night. Outside the octagonal brick structure, the interior mood of contemplation is ex-

tended by a reflecting pool, which is highlighted at the far end by a large sculpture. Designed by the late Barnett Newman, the 20-ft.-tall sculpture is in the shape of an upside-down obelisk and is dedicated to Martin Luther King. The center is under the direction of the Institute of Religious and Human Development, an adjunct of the Texas Medical Center, which has in recent years promoted the study of ethics in medicine and religion.



REMOTE CONTROL

The new System Control Center of the British Columbia Hydro and Power Authority is located on the Simon Fraser campus (see Dec. '65 issue), where it complements a previously existing water tower and microwave facility. Designed by Rhone & Iredale, the center houses the remote control system for generating electricity throughout the province. The office area of the reinforced concrete structure is elevated on a base like a pedestal and is distinguished by a ribbon of bronze-colored windows. The base stands on a terrace, paved with grass and exposed aggregate concrete, which provides access to the offices and forms a base for the water tower. Beneath the terrace are two control rooms and a system computer. The rear of the building steps down in layers, with a terrace topping service areas.

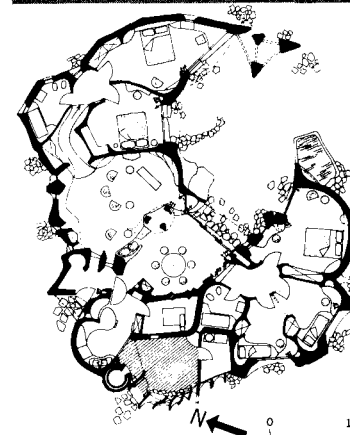
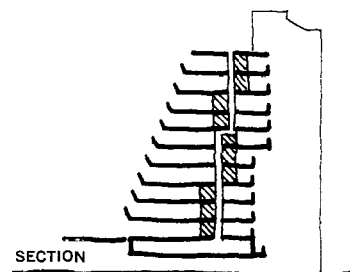


ATHLETES FIRST

Munich's Olympic Village is nearing completion as 1972 game time approaches. Designed to be a permanent urban development, the village center, after the games, will include pedestrian platforms, a shopping complex, administrative buildings, schools, a three-structure

apartment house, a hotel, a medical center, student center and church center, and a parking garage and service station. During the games, the village will serve Olympic participants. The highrise buildings and shopping areas will combine residential, medical and guest facilities with information,

service, contact and visitor areas. The middle-rise structures in the background will house male athletes and the foreground buildings will house women athletes. The firm of Heinle, Wischer & Partner developed the village plan working with Behnisch & Partners, competition winners for the overall plan.



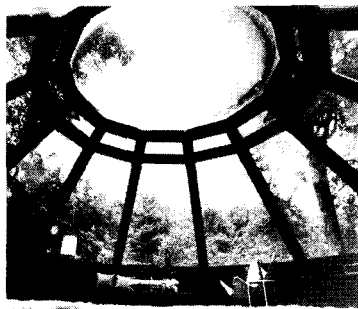
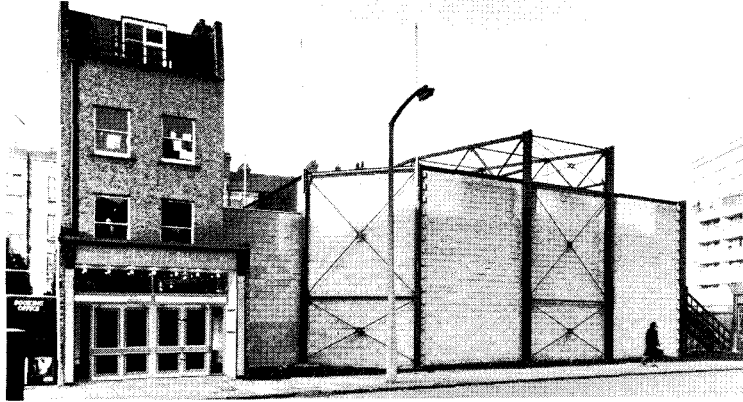
RETREAT TO FANTASIA

Nestled in a wood near La Spezia, Italy, this house is the rural retreat for an urban-based family of vineyard owners, who meet here for long days of mushroom-gathering, baking and sitting before the fireplace. The house is almost hidden in its private wood, but once inside the rooms are open, well-lighted, peaceful, yet cozy. The feeling of continuity inherent in a large family is echoed in the living areas, which flow one into the other. The bedrooms all have large French windows facing a patio, with the exception of the children's rooms, which are more sheltered. The patio is designed like a room, with the sky as its natural ceiling and natural growth covering the walls. Called Villa Gandino, the free-form house is designed by Gian Simonetti.

ONLY FOR THE YOUNG

London's Young Vic Theater is a temporary, low-cost facility built on a World War II bomb site and intended for under-25 audiences. Designed by Howell, Killick, Partridge & Amis, the Young Vic will share casts and staging with nearby Old Vic and

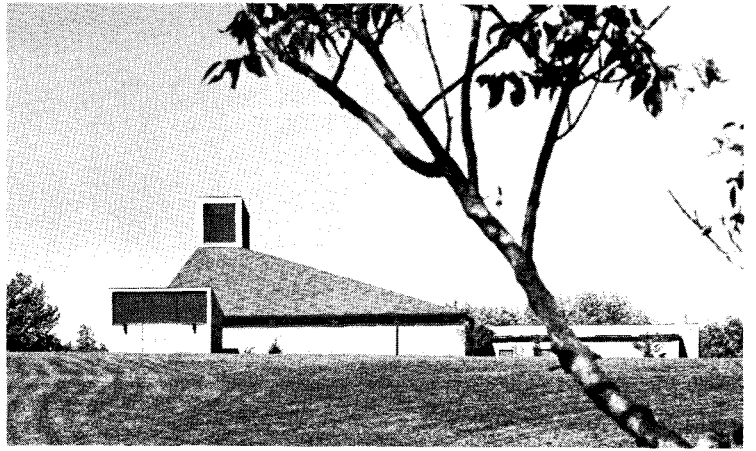
seat 450 persons, mostly in an octagonal amphitheater, some in a gallery that, to the rear of the stage, is an acting area. The site's lone bomb survivor, a butcher shop, has been converted to foyer and office space; dressing, rehearsal and snack areas are in an ancillary block.



OPEN TO THE SKY

Aaron Cohen has designed a three-story Vermont ski house with a twelve-faceted stainless steel roof, trapezoidal windows and a double plastic dome. The effect is to bring the outdoors into the 1,700-sq.-ft. house; sunlight helps cut winter heating bills, while trees provide summer shade. The living room is almost all skylight. It is in the shape of crescent moon, with the remainder stepped down to a sunken fireplace via a built-in bank of seating. A deck runs around the second floor, which has two bedrooms, a bath, circular kitchen and dining area. The ground floor has additional bedrooms.

PHOTOGRAPHS: Page 5 (top) Balthazar Korab; page 6 (top) D.P.A. Pictorial Parade; page 7 (top left) Sam Lambert, (middle left) Bruno de Hamel, (top right) George Stille, (middle, lower right) Rush J. McCoy.



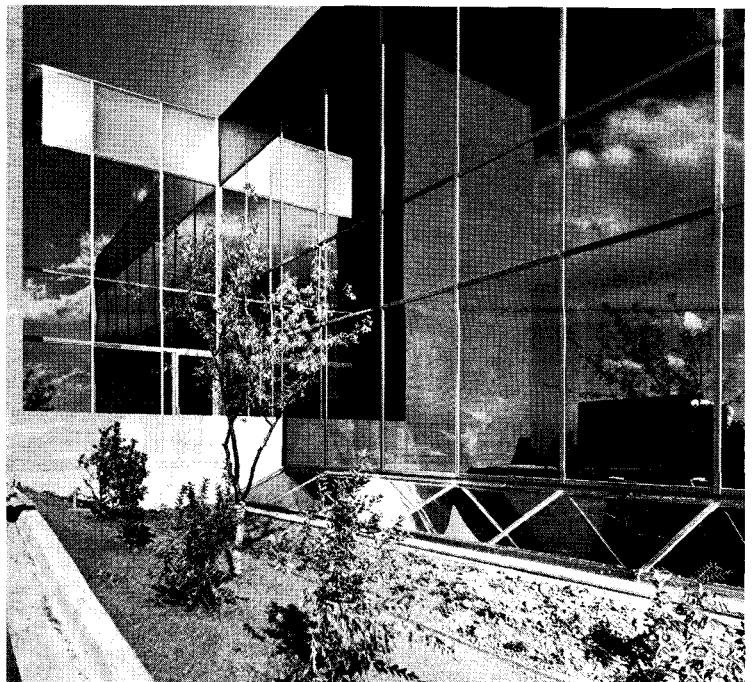
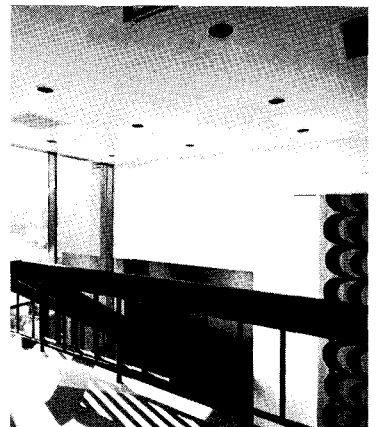
A COUNTRY SETTING

The new St. Barbara parish, in Kenton County, Ky., boasts a new church center designed for expansion. The form of the church is an upswept continuation of a natural ravine, highlighted by a clerestory tower over the altar and a band of

windows between walls and roof. The church seats 300, and may expand for 600. Wrapped around it is a larger school, on a lower elevation. Both are of timber with masonry walls and exposed wood beam and deck ceilings. The architect: Robert Ehmet Hayes.

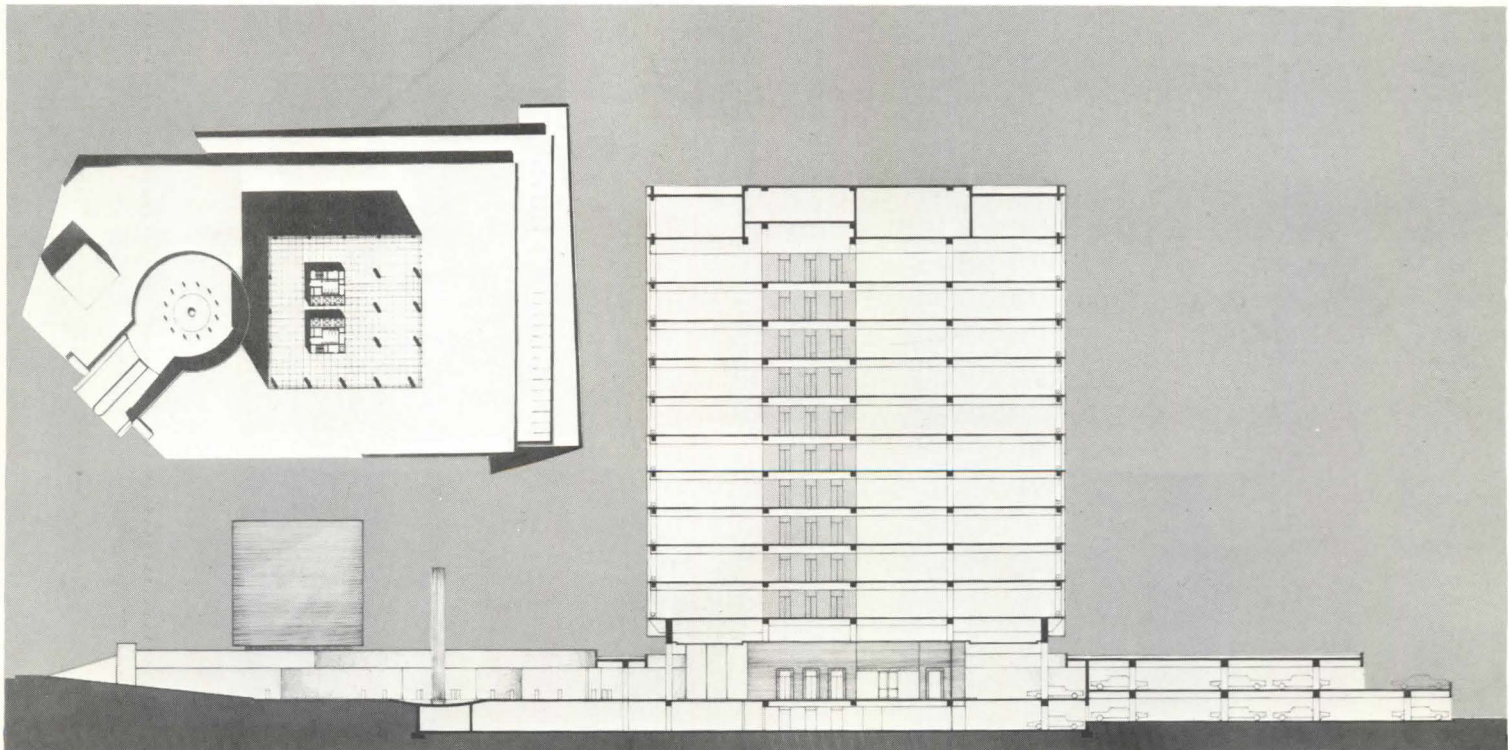
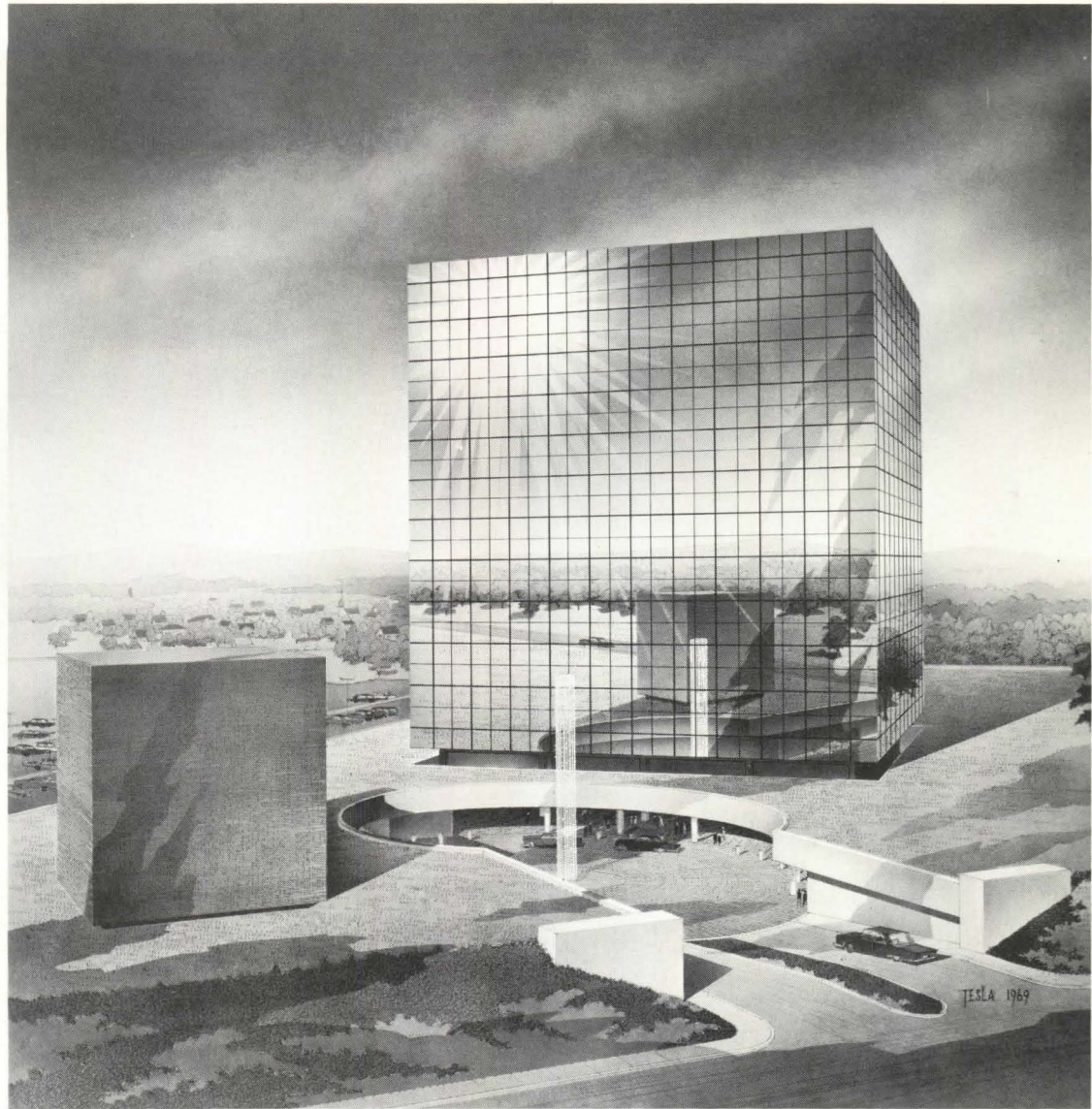
MOUNTAIN MIRROR

This office sheathed with reflective glass is a positive response to the Colorado mountain views of its suburban site. The facade also lessens the structure's impact on the site by mirroring the surrounding sky and plain. Designed by Muchow Associates, the 120-ft.-sq. plan features a separate entrance court, and garden-level perimeter skylighting allows some offices to be located below grade. Mechanical cores are outside for maximum interior flexibility.

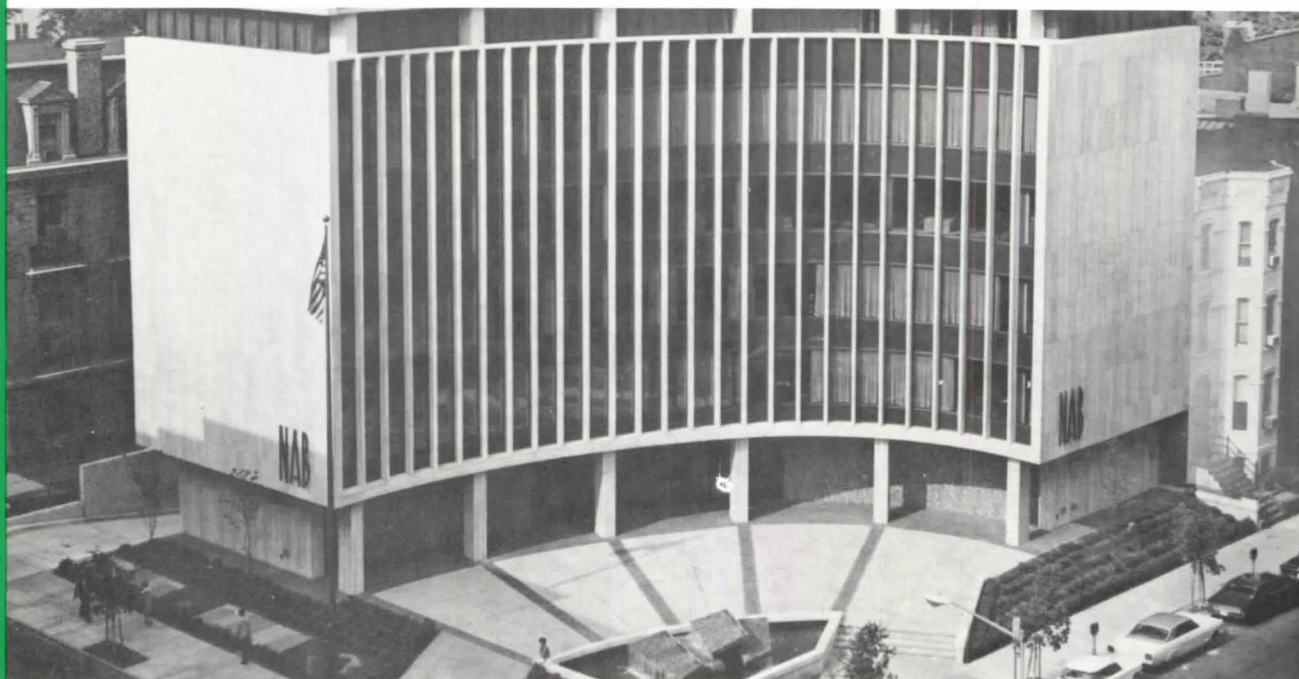


CUBED SERVICES

The silver-mirrored office cube seen at right will house the Maryland Hospital Service in Towson, just north of Baltimore. Designed by architects Peterson & Brickbauer with Brown Guenther Battaglia Galvin as associates, the structure will have eleven office floors above a wide platform which, in turn, covers parking garages and entrance lobbies (see section). The platform itself will be seeded with grass. Next to the mirrored cube is a smaller one finished with flame red brick; this will contain mechanical services. A second, silver-mirrored cube for additional offices may go up behind the red cube when these headquarters expand. The sunken entrance court, with its central fountain, has been designed to serve this additional cube as well. In addition to putting the cars out of sight, this solution turns the cubes into pure, minimal sculpture, set on a tray of grass in the midst of a lovely landscape.



Electric Heat Recovery System In New Headquarters Office Building Chosen for Economy, Versatility



The National Association of Broadcasters Building in Washington, D.C. features an elliptical front facade and a spacious plaza.

PROJECT: National Association of Broadcasters Building, Washington, D.C. **ARCHITECTS:** Mills, Petticord and Mills, Washington, D.C. **CONSULTING ENGINEERS:** Kendrick and Redinger, Arlington, Virginia.

DESIGN CHARGE: To design, on a small corner lot, a distinctive, dignified headquarters building for a major trade association with a lobby, reception area, private and general offices, library, conference rooms, board room, and employee lounges.

DESIGN RESPONSE: NAB's new headquarters is a handsome seven-story structure constructed primarily of travertine marble, bronzed aluminum, and glass curtain wall. Architect Loren C. Sage of Mills, Petticord and Mills, took full advantage of a corner lot running tangent to a diagonal avenue to provide an elliptical front facade and a spacious landscaped plaza with a large fountain. Two underground levels of the building running the entire length of the plaza are used for indoor parking.

The space conditioning system selected for the building is based on heat recovery principles and

makes economical use of the fact that the interior zones require cooling almost year around. Air distribution is by means of a double-duct high-velocity system. Air drawn through the fluorescent lighting fixtures into plenums above the interior zones supply most of the heat requirements of the hot deck, which is equipped with duct heaters for supplementary heating. Two 110-ton air-cooled reciprocating chillers furnish chilled water to cooling coils in the cold deck. Mixing boxes under the control of independent wall-mounted thermostats regulate the temperature of the air entering the individual zones and any zone may be on heating or cooling at any time regardless of conditions in other portions of the building. Consulting Engineer Lee Kendrick says that the electric system was selected after a feasibility study indicated that owning and operating costs over a 20-year period would be lower than those of an equivalent system using a gas-fired boiler for heating. "The electric system is working beautifully," Mr. Kendrick reports, "and is living up to all expectations."

ELECTRIC HEATING ASSOC., INC.
437 Madison Avenue
New York, N. Y. 10022

E 16

ELECTRIC COMFORT SYSTEM

1 CATEGORY OF STRUCTURE:

Commercial—Office Building

2 GENERAL DESCRIPTION:

Area: 94,600 sq ft
 Volume: 1,121,600 cu ft
 Number of floors: seven plus two basement levels
 Number of occupants: 200
 Types of rooms: private and general offices, conference rooms, lunchroom, lobby, employee lounges, storage, indoor parking

3 CONSTRUCTION DETAILS:

Glass: double solar bronze in south wall, single clear in north wall
 Exterior walls: glass curtain walls on north and south sides; two remaining walls: 1¼" traver-tine on 2½" precast backup, 1" expanded polystyrene insul. (R-4) ⅝" gypsum board; U-factor: 0.2 (avg.)
 Roof and ceilings: built-up roof on 2" rigid insul. (R-6), 6" concrete deck, acoustical plaster or tile; U-factor: 0.1 (avg.)
 Floors: concrete slab
 Gross exposed wall area: 33,400 sq ft
 Glass area: 9800 sq ft

4 ENVIRONMENTAL DESIGN CONDITIONS:**Heating:**

Heat loss Btuh: 1,500,000
 Normal degree days: 4333
 Ventilation requirements: 11,000 cfm
 Design conditions: 0°F outdoors; 70F indoors

Cooling:

Heat gain Btuh: 2,700,000
 Ventilation requirements: 11,000 cfm
 Design conditions: 95F dbt, 78F wbt outdoors; 75F, 50% rh indoors

5 LIGHTING:

Levels in footcandles: 50-100
 Levels in watts/sq ft: 2-4
 Type: fluorescent

6 HEATING AND COOLING SYSTEM:

Two air handling units supply warm and cool air to thermostatically controlled mixing boxes in each zone of the building by means of a double-duct high-velocity system. The hot deck is equipped with 728 kw of electric duct heaters. Two 110-ton air-cooled reciprocating chillers provide water for the cooling coils in the cold deck. A separate 30-ton direct-expansion air conditioning unit cools make-up air as it enters the building.

7 ELECTRICAL SERVICE:

Type: underground
 Voltage: 265/460v, 3-phase, 4-wire, wye
 Metering: secondary

8 CONNECTED LOADS:

Heating & Cooling (250 tons)	852 kw
Lighting	260 kw
Cooking	26 kw
Water Heating	30 kw
Other	360 kw
TOTAL	1528 kw

9 INSTALLED COST:*

General Work	\$1,800,000	\$19.00/sq ft
Elec., Mech., Etc.	700,000	7.40/sq ft
TOTALS	\$2,500,000	\$26.40/sq ft

*Building was completed 2/69

10 HOURS AND METHODS OF OPERATION:

8 a.m. to 6 p.m., five days a week.

11 OPERATING COST:

Period: 5/12/69 to 5/12/70
 Actual degree days: 4555
 Actual kwh: 3,162,000*
 Actual cost: \$45,058.12*
 Avg. cost per kwh: 1.42 cents*
 *For total electrical usage

Billing Date	Degree Days	Demand	kwh	Amount
6/12/69		488	212,000	\$ 3,225.47
7/14/69		592	298,000	4,176.19
8/12/69		599	303,000	4,259.24
9/11/69		599	280,000	4,100.18
10/10/69	33	563	198,000	3,271.40
11/10/69	317	536	228,000	3,231.89
12/11/69	696	565	258,000	3,504.57
1/13/70	1110	724	340,000	4,253.41
2/11/70	868	769	286,000	3,852.20
3/13/70	771	670	277,000	3,937.33
4/13/70	605	544	254,000	3,732.76
5/12/70	155	569	228,000	3,513.48
TOTALS	4555		3,162,000	\$45,058.12

12 FEATURES:

The ducted system is designed so that the warm air exhausted from the interior zones during the heating season is used to supply part or all of the heat losses in the perimeter areas.

13 REASONS FOR INSTALLING ELECTRIC HEAT:

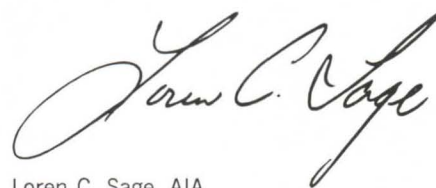
A feasibility study indicated that the owning and operating costs of the electric system projected over a 20-year period would be less than those for an equivalent system using a gas-fired boiler for heating.

14 PERSONNEL:

Owner: National Association of Broadcasters
 Architects: Mills, Petticord and Mills
 Consulting Engineers: Kendrick and Redinger
 General Contractor: Chas. H. Tompkins Co.
 Electrical Contractor: E. C. Ernst Co.
 Mechanical Contractor: Alliance Plumbing & Heating
 Utility: Potomac Electric Power Company

15 PREPARED BY:

C. E. O'Daniel, Commercial Customer Department, Potomac Electric Power Company

16 VERIFIED BY:


Loren C. Sage, AIA



Lee Kendrick, P.E.



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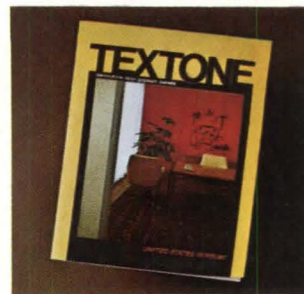
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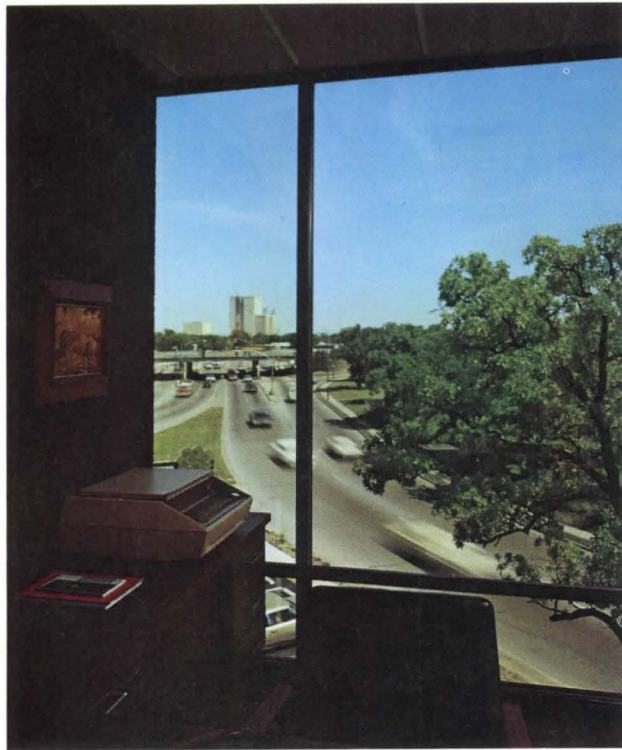
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BUILDING AMERICA





Golden Vari-Tran® reflective glass makes its debut in Dallas.

This is Lemmon Park Central, the office building designed by Dallas Architects Woodward, Cape & Partners, Inc. Vari-Tran/Golden gave them a beautiful new way to achieve aesthetic effects, while effectively controlling solar radiation and significantly reducing cost of cooling equipment and annual operating expense for owners Southwestern Dynamics, Inc.

Window walls are Thermopane® insulating glass with a golden Vari-Tran coating. Spandrels are Tuf-flex® tempered glass, also Vari-Tran coated. So the building's facades read as one material. Reflections on its glass surfaces change and shift with light conditions. And the surrounding environment becomes a part of its architectural expression.

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L-O-F HI-PERFORMANCE GLASS 



Peace-of-mind secrets revealed

Let's face it. Everyone worries about lockset security these days . . . whether he runs a plant, a school, an office building or any other building that must be kept under lock and key.

And if you are among those worriers, chances are you're insecure about two potential cracks in your security armor, namely key control and pick resistance of your locksets.

On both counts, the Sargent Maximum Security System offers reassuring news.

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machines cannot duplicate this key, and you remain in control.

Now look at pick resistance. With three rows of pins, as shown in the cut-away cylinder above, instead of just one, the Sargent Maximum Security System cylinder all but defies

picking or raking.

And the chance of any one key operating another lock cylinder by accident just doesn't exist. That's because there are 24,500 unduplicated key combinations available in any one system at even the master key level.

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LETTERS

OLD-NAGY REMEMBERED

...n: I write as an old friend. I have the same pleasant of browsing through AF as happy adventure into the d of architecture. This habit back to 1942 when, as a enjoyed lying on a bunk, ng pages and wondering if ould ever be an architect. ng served for some 20 years in many areas of architec- I reflect on the teachings non-architect: Lazlo Mo-Nagy.

recall reading his "the ex- nce of architecture" from New Vision and Abstract of rtist. I compare his thoughts mix them with what I see e December 1970 issue of Moholy tells us that the ience of space is rarely per- d in man's expression of tecture. He also notes that culptural forming of build- is an evolutionary phase in tecture moving towards ivity in spatial expression. azes me that it is an artist can awaken the feeling that strong in my own desire architect. So much of our rn architecture is an exer- in forms: a play of light, e, texture in proportions and es of building surfaces. This of the artist is yet to enter we call architecture: unity versity—a spatial ordering e components of sky, earth, e and buildings.

hope my comments are not as one more condemnation e times. I can only see a social order of many dis- es: men sharing in a co- tive effort to discover and l the insight of the artist.

SIDNEY JONAS BUDNICK
...mento, Calif. Architect

FORRESTAL AND MALL

...m: David Dibner's story of design and construction of James Forrestal Building (Feb. issue) offers an in- ting account of the maneu- g of an attractive, imagina- and efficient project gh the complex maze of tectural controls that gov- levelopment in Washington.

How unfortunate it is that Dibner and his associates d such a complete success. William Zeckendorf, the mission on Fine Arts, and

many others predicted, the rais- ing of FOB 5 across the 10th Street Mall totally destroys the effect of the mall and seriously threatens the commercial and cultural facilities of L'Enfant Plaza and the New Southwest.

Mr. Dibner's comment that "raising the major mass in the air would allow a much broader view down the mall to L'Enfant Plaza than a canyon between two tall buildings" is a ludicrous justification for plan assassination. Even in the article's care- fully-shot photographs the Inde- pendence Avenue entrance to the mall is hardly more inviting than the entrance to a parking garage. From within, the view back down the major axis of the mall is rudely blocked by the span of the office structure, leav- ing only the tip of the Smith- sonian tower peeking foolishly over the mass of the building.

I. M. Pei & Associates' scheme for the Southwest redevelopment project represented a flawed but positive attempt to end the so- cial, economic, and physical iso- lation that has stifled develop- ment in Southwest Washington since the early 19th Century. The Forrestal Building negates that effort. The planning weak- nesses of the 10th Street Mall are rendered near-fatal by the overpowering handicap imposed by the Forrestal Building.

Taken out of its physical con- text, the James Forrestal Build- ing may set new standards for federal architecture, but viewed in its totality the project stands as an example of irresponsible and tragically harmful design.

ROBERT B. FREEMAN, Jr.
New Haven, Conn. Yale, '72

COPPER INNOVATIONS

Forum: Your illustration of the copper-roofed house in the March issue (page 6) did not show the "copper roofing system with Roman or Greek clay tile" as described in the copy. Is this necessary or merely decorative? And what is a "bronze floor with patterned marble"?

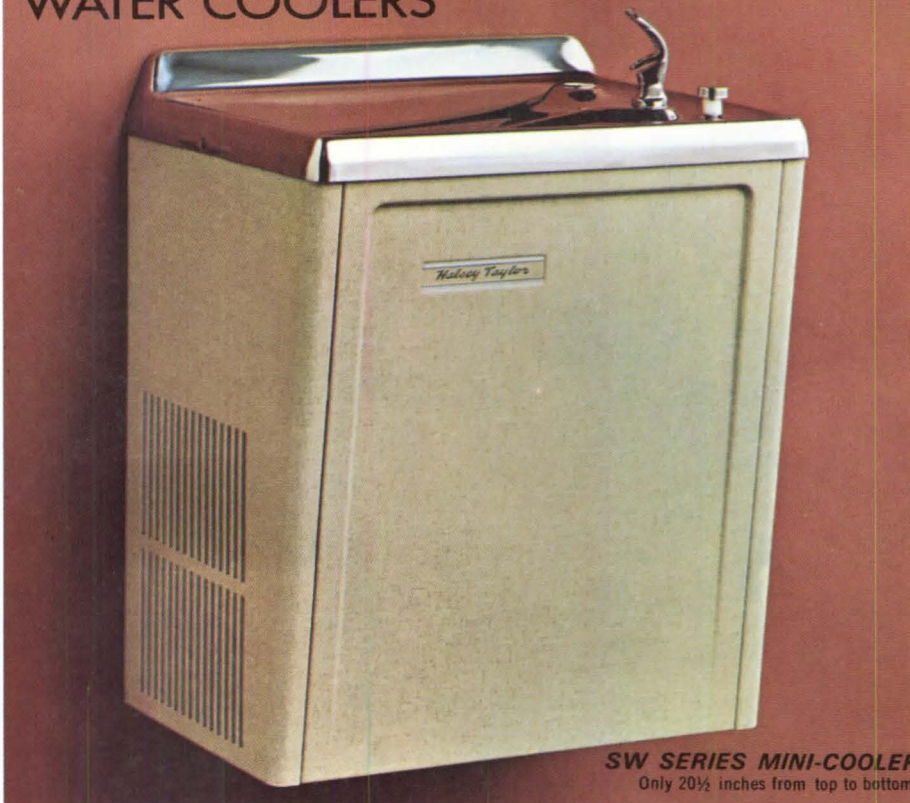
DAVID COOPER
Washington, D. C.

The Copper Development Associ- ation's goals were: to be innova- tive and to be competitive in price. Our error, unfortunately, made them more innovative than they are. The roof has no clay tiles, nor have the floors pat- terned marble. We intended to mention these materials as com- parable in price with the copper used.—Ed.

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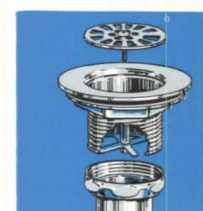
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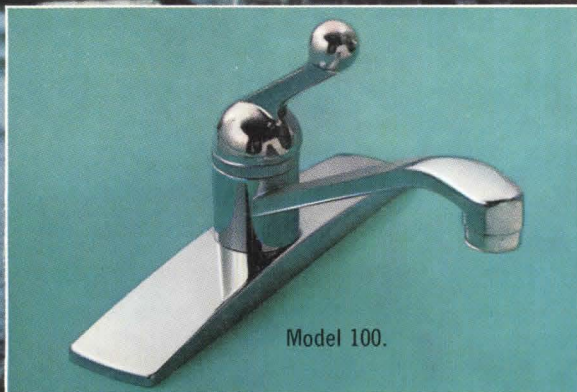
The success of Chicago's famous Marina City is no accident. It's the result of specifying Delta single-handle faucets exclusively in the building complex.

Mr. Butler, who's been at Marina City from its beginning, figures that in 8 years less than \$200 was spent to maintain over 5000 faucets. But low maintenance cost is just one of the advantages you get when you specify Delta single-handle faucets.

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FORUM

Last month we ran stories on four new theaters that seemed worth discussing: the New Playhouse in Dusseldorf, in West Germany; the Shakespeare Festival Public Theater in New York City; the theater planned for the proposed Birmingham, Ala., Civic Center; and the Mummars Theater just completed in Oklahoma City. We were enthusiastic about all four, and, I think, rightly so.

It is a month later now, and I have some embarrassing news: two out of those four theaters are on the brink of disaster. The only reason the other two are not is that one of them (the one in Birmingham) isn't even built yet; and that the second one is in Germany, where the people and their government seem to feel that the theater is worth supporting.

Not so in the U. S. Joseph Papp's Shakespeare Festival Public Theater in Manhattan is \$1 million in the hole, with no relief in sight as we go to press. (The City of New York can't even afford to pay for teachers or for cops.) And Mack Scism's Mummars Theater, in Oklahoma City is \$462,000 in the hole, and sinking rapidly.

This is really unacceptable. A few weeks ago, I ran into an old pal who was playing one of the leads in "A Midsummer Night's Dream," performed by the Royal Shakespeare Company. "Dream" was, of course, Broadway's most spectacular hit in early 1971; and one reason, I think, was that the actors were so sure of their place in the scheme of things. Alan Howard, who played Oberon, did not have to worry about next month's pay check. The British Government thinks highly enough of him and of the Company to make sure that its members will always be able to eat.

Architects frequently (and rightly) complain about the niggardly budgets voted for their buildings by various authorities. But shouldn't we be even more deeply concerned about the operational budgets that are voted by our clients? What good is a marvelous theater if there is no money for actors? What good is a really innovative school if there is no money for teachers? What good is form if there is no content?

Send us your answers—or, better still, phone your clients.

—PETER BLAKE

more than tenuous at best—was clearly over.

The President had suspended the Davis-Bacon Act, which requires that labor on federally aided building projects be paid the locally "prevailing wages". In the 40 years since its passage, "prevailing wages" has come to mean top union scale. The suspension was the least powerful of the options available to him following months of jawboning—veiled and unveiled—in an effort to get unions and contractors to curb the industry's price-wage spiral voluntarily.

Having declared that an inflationary "emergency" existed in construction, the President's suspension of Davis-Bacon seemed likely to have no noticeable effect on inflation, or even on hiring practices, before some 1,368 union contracts expire this year.

Both sides were very unhappy. "Punitive . . . unfair," was A.F.L./C.I.O. President George Meany's appraisal. He didn't like it because it did nothing to restrain rising prices and profits. William E. Dunn, executive director of the Associated General Contractors of America, was hardly more pleased: "Disappointing, inadequate, and totally ineffective." To deflect further the thrust of the move, 37 states have laws similar to Davis-Bacon that might complicate matters legally.

The contractors have already expressed their approval of stiffer action: wage-price controls or a temporary freeze with wage agreements submitted to a federal stabilization panel. And, though they deny it, union leaders would probably welcome imposed controls to escape the alternative: volun-

Oliphant in *The Denver Post*

LABOR

DAVIS-BACON BLUES

Peter J. Brennan, President of the New York City Building and Construction Trades Council who was feted at the White House last spring following construction workers' attacks on antiwar demonstrators in Wall St., called President Nixon a "union buster" last month. The sentiment was echoed by labor leaders across the country. The White House-Hardhat romance—never



tary controls that the rank and file would label "sell-out."

Last August, Congress gave the President standby powers to impose controls. He said he didn't want them. HUD Secretary Romney, DOT Secretary Volpe, and Labor Secretary Hodgson have all urged that he impose a temporary freeze. Now the Administration has asked the Congress to renew the President's powers to do so in case his often-stated aversion to such federal intervention cannot withstand the onslaught of those impending contract talks.

YEAR 2000

FUTURE PERFECT . . .

Westinghouse Electric Corp. and the People's Gas Co. (of Chicago) have both looked into the future and found it perfect.

- Westinghouse has designed and built a home which it calls Electra 71—now on display in Coral Springs, Fla. Electra's most astonishing feature is a computerized "total security" system with a kitchen control board that looks like the instrument panel of an Apollo command module.

The system is designed to respond automatically to burglary,



Westinghouse command post

vandalism and fire. A small, solid-state computer receives, interprets and transmits information provided by built-in sensors. For example: a sensor detects smoke; the computer interprets the signal and transmits this intelligence to the kitchen command post; an alarm is set off and the type of emergency is displayed on the instrument panel; simultaneously this coded intelligence goes out

over a telephone line to a communications station which is manned 24 hours a day. Here, an attendant summons the fire department. By telephone? If so, our scenario has provided the telephone company two opportunities to screw it up.

In case of accident or illness, the procedure is more difficult. One has to press a button at the kitchen command post to summon a doctor or an ambulance.

- The People's Gas Co., starting in June at Chicago's Museum of Science and Industry, will exhibit the "ideal" 21st-Century society as envisioned by design students at the Illinois Institute of Technology.

In one's portable plastic home, the family computer will redesign free-form plastic walls and furniture to suit the family's mood; select menus, cook food—by gas, we guess—serve it and clean up after. First thing each morning, one will have an all-over undergarment sprayed on. And the last thing each night the underwear will be peeled off and tossed into a recycling unit.

In this world, everything is plastic except, supposedly, the people who, by the grace of Computer, will have nothing to do but enjoy their freedom and cultivate "close interpersonal relations."

. . . AND FUTURE SHOCK

A recent weekend experiment in Louisville, Ky. sought to simulate what its organizers believed would be our living conditions in the year 2000. Forty-eight volunteers crowded into a downtown office building where they were subjected to constant noise, almost continuous electric lighting, 20 sq. ft. of living space per person, inadequate sanitary facilities, and no food.

Of the original 48, 36 "survived" after 54 hours and 12 were listed as "casualties." Said Charles Aylworth, a University of Louisville graduate psychology student and one of the organizers: "We've found people can adapt to stressful conditions. . . . We will be able to keep living—miserably."

ESCAPE

On February 27th, at 3 p.m. sharp, a man wearing what appeared to be a space helmet arrived in front of Manhattan's



Flyhead and friend

Seagram Building, had himself placed inside a white box constructed, roughly, like a steam cabinet, and remained standing, motionless, inside the box, with only his space-helmeted head visible above the box. After exactly 30 minutes of this odd exercise (which drew a small crowd but no cops), "Flyhead" was uncased and whisked away by accomplices. On the same day, in Krefeld, Germany, other members of the "Flyhead" gang wrapped up Mies van der Rohe's 1928 Lange House in an air-supported vinyl bubble.

The authors of these mysterious manifestations are members of the Austrian Haus-Rucker-Co. group. They describe "Flyhead" as "a green-tinted polyethylene helmet with an interior split prism at eye level, contoured to create a multi-image view and the spectral colors of the surrounding environment." The helmet is designed to be worn over stereo headphones which are connected to a special sound transformer that "breaks your own 'sound barrier'." In other words, a "high" induced by technology instead of chemistry.

"To escape the prison of technology," says H-R-C, they would make technology work for man by "waking up his senses, his talents, his adventurism, his funny bone." End of mystery.

HIGHRISES

VIEW FROM THE BAY

The proposed 550-ft.-high U. S. Steel tower, which was designed by Architects Skidmore, Owings & Merrill to be built on a plat-

form extending into San Francisco Bay (Nov. issue, page 23) has been rejected by the San Francisco Board of Supervisors. The design was killed when the board passed, six to four, an amendment to the planning code limiting building heights on that portion of the waterfront.

The new limitations, first proposed by Planning Director Allan Jacobs, impose an 84-ft. height limit on 90 per cent of the area and a 175-ft. limit on the remaining 10 per cent.

U. S. Steel spokesmen indicated that the restrictions would make their project economically infeasible and that new sites would be investigated.

MOBILES IN THE SKYE

A highrise mobile home park? Yes. Called "SkyeRise," it is located in Vadnais Heights, a suburb of St. Paul, Minn. Shown is one of three such three-decker units which, when completed, will form a nine-unit fan-shaped structure. Each wing is made of pre-stressed, pre-formed concrete platforms weighing approximately 52,000 lbs. Each platform is 80 ft. long, 24-ft. wide, and supports

SkyeRise wing



a mobile home 70 ft. long and 14 ft. wide.

The ground and second-level homes were wheeled in, since the wing is built against an earthen bank level with the second "story." The top-level unit was lifted into place by crane.

The Vadnais Heights village council amended its mobile home ordinance to permit construction of the ramp facility so that more living space could be provided per sq. ft. of land.

LANDMARKS

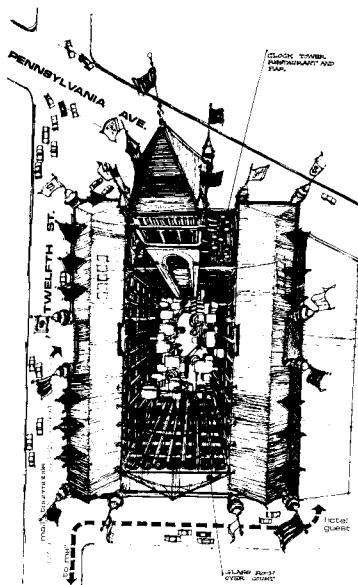
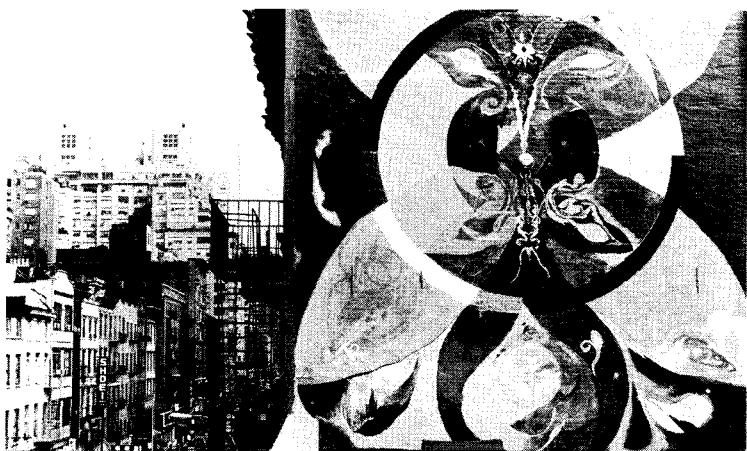
REBEL MURALIST

Remember Gulley Jimson in "The Horse's Mouth" who was always painting murals on other people's property, including the sides of buildings? They got torn down, of course. Well, New York City is rapidly becoming an outdoor gallery of such works. But of all the wall muralists in Manhattan, Thomas Ryan is the only one in the tradition of Joyce Carey's hero: his mural—on the wall of a building where he once had his studio on West 8th Street—is, unlike the others around town, more maximal than minimal, and it is illegal.

The mural is in what has been designated the Greenwich Village Historic District, thanks to the city's Landmarks Preservation Commission. Ryan applied to the commission for a permit, was rejected, and went ahead anyway, "moving art out into the world."

"Non-architectural," was the commission's opinion, "... an inappropriate shifting of emphasis away from the shop fronts and architectural features."

Artist Ryan's illegal mural



Moore's P.O. plan

The Landmarks Commission is empowered to take Ryan to court. The commission's evaluation of the mural was given in October; the mural is still there.

Where the commission lacks power, apparently, is over those shop fronts. The street is unique: a mind-blowing commercial bottleneck of electric boutiques and glorified orange-juice, pizza and hotdog stands that doesn't seem to belong in any century, much less the 19th.

SAVE THE OLD P.O.'S!

St. Louisans have been trying to preserve their Old Post Office (circa 1884; architect: Alfred B. Mullett; style: Second Empire) since it first became endangered in 1961. Late in February, preservationists were given a hand-up when the U. S. Department of the Interior designated the Old P.O. a National Historic Landmark.

Meanwhile, an 11th-hour campaign is underway to save

Washington, D. C.'s Old Post Office—a Romanesque castle on Pennsylvania Ave.—from both the fates currently proposed for it: under the Pennsylvania Ave. Plan it would be demolished entirely to make way for a new building that would complete the so-called Federal Triangle; and another proposal would spare only the clock tower (Apr. '70 issue, page 28) to give tourists a view of Official Washington—monumental, characterless, and often lifeless after dark.

Young people are circulating petitions to save the Old P.O.; and two architects, John Wiebenson and Arthur Cotton Moore, have independently proposed schemes for the building's use that would provide a lively mix of cultural and commercial activities.

In Architect Moore's proposed conversion, the building's lowest three levels would yield 80,000 sq. ft. of commercial space. Above would be a hotel with 450 rooms, to the north, a garage that would park 600 cars. The spacious, glass-covered central courtyard would be used for commercial bazaars, and cultural and entertainment events.

Endorsements for preserving the entire building for such purposes have come from Architect Nathaniel A. Owings, chairman of the Pennsylvania Ave. Commission; and Daniel P. Moynihan, who has worked hard on behalf of both Presidents Kennedy and Nixon to get the Ave. rebuilt according to the commission's plan.

EXHIBITIONS

OTTO AT THE MOMA

On the 18th of next month, an exhibition of the work of German Architect Frei Otto will open at the Museum of Modern Art in New York. It has been subsidized by the German dye trust, Farbwerke Hoechst, and the German government.

Appropriately enough, the many building designs and theoretical studies of the master of tent structures will be housed out of doors—under a tent. The structure was developed especially for the exhibition by a former associate of Otto's, Professor Larry Medlin,

(continued on page 61)

INDUSTRIAL BUILDINGS

A 22-page review of new plants, warehouses, and other industrial facilities in the U.S., Germany, Italy, and Great Britain.

MORE THAN JUST A VOLUME

Pennsylvania Olivetti
plant demonstrates
Louis Kahn's approach
to factory design

The countryside of Southeastern Pennsylvania is spattered with exurban factories—most of them flat-topped, one-story structures with corrugated metal walls. When the Olivetti Corporation decided to build its U. S. typewriter and computer plant on farmland just outside Harrisburg, a different kind of factory was obviously in order. Olivetti, whose devotion to good design was the subject of a recent exhibition at the Louvre, approached the problem with their traditional concern for quality: they commissioned Louis Kahn to design the plant.

One of Kahn's first concerns was for the landscape. The farm Olivetti purchased had already been split three ways by a new interstate highway, but the portion the plant would occupy was unspoiled pasture land, with a stream meandering through it. A plateau of about 15 acres had to be created by cut-and-fill to accommodate the 600,000 sq.-ft. plant—only about one half of which has been built in the first stage. (The rest of the leveled area has been planted in corn.) The only other major change in the landscape is virtually invisible from the highway: three tiers of parking area notched into the slope behind the plant, separated—and hidden—by long grassy mounds.

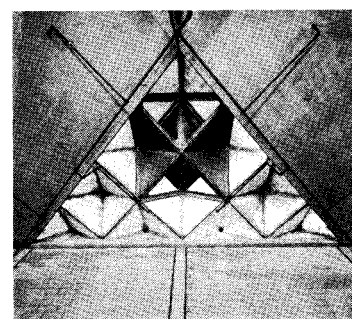
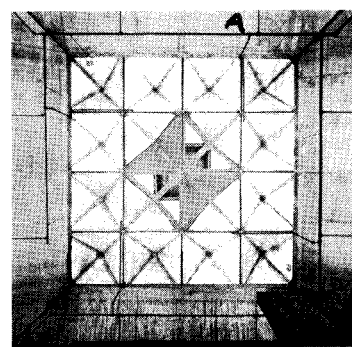
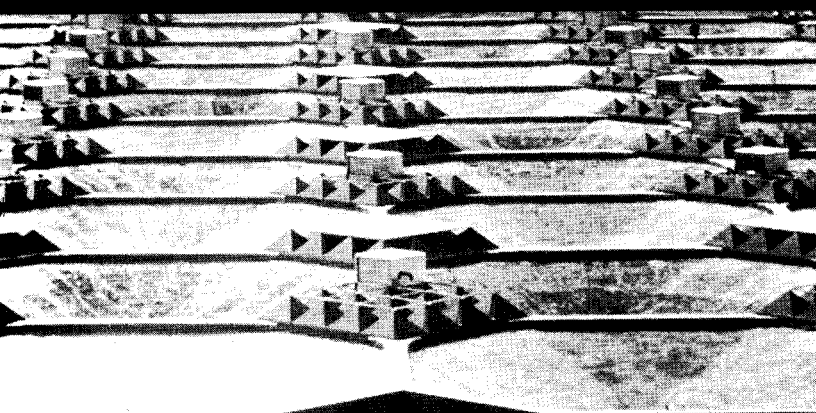
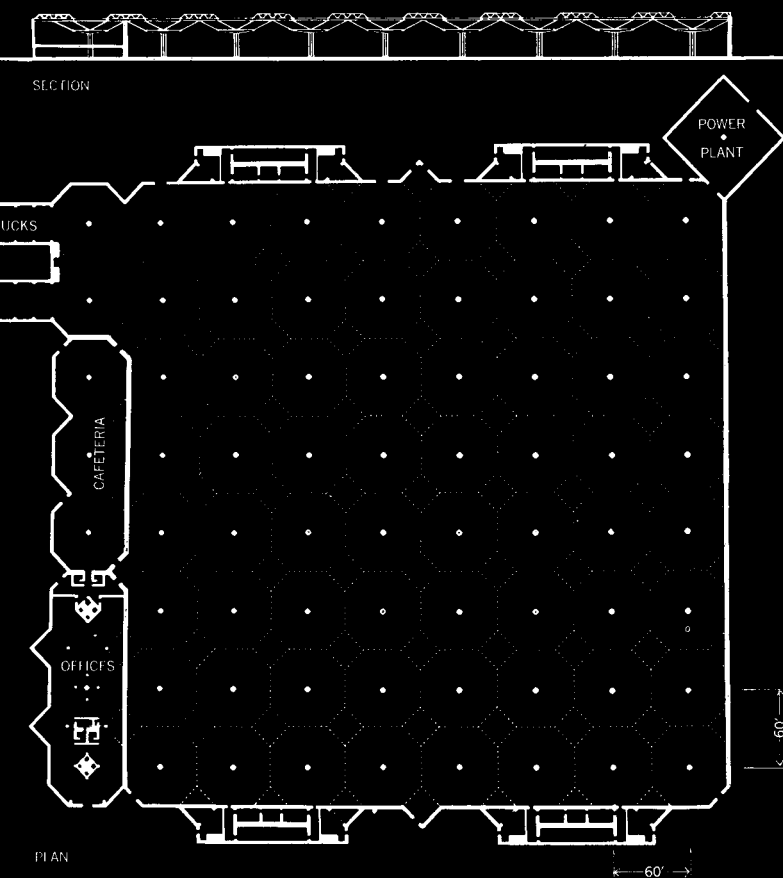
Landscaping, in the sense of adding ornamental planting, has been almost entirely avoided. Kahn felt that unless there was a strong reason to plant something (to restore cover on the slopes, for instance, or to reinforce tree rows bordering the site), it was better to plant nothing. A bare gravel-covered circle at the visitors' automobile entrance (overleaf) is one example of this discipline.

In the plant itself, all kinds of facilities—production space, offices, and cafeteria—are housed under the same long-span concrete roof system. Both Kahn and his client, says an Olivetti publication, "wanted to get away from the concept of bosses and laborers living on different levels and in totally different surroundings."

Kahn explains how he arrived at the structural system of cast-in-place "inverted umbrellas," spaced 60 ft. apart in both directions. "I asked myself," he recalls, "what makes the factory problem particular? Then I thought, 'A column is an enemy







The factory roof (left) is a series of "inverted umbrellas" of cast-in-place concrete, with plastic skylights in the gaps between them. Parking on the site (top photo) is concealed behind long, grass-covered mounds. Production lines in the plant (plan, left) flow counterclockwise from the truck dock and return to it. Employee lockers and lounges are in four blocks along the exterior walls. The power plant, now projecting at one corner, will be at the midpoint of the plant when it doubles in size. Skylights (above) are punctured for various mechanical installations, and some are sliced in half by walls. In the production area (opposite), all pipes, conduits, and unit air conditioners are suspended in the "servant space" above the 20 ft. by 20 ft. lighting grid.

in a factory,' because I thought of the factory as being, first of all, a competitive building; it must be ready to jump and change, overnight. I would like to have built a factory without a single column, but within the economic scheme, that is not possible."

Kahn, working with Engineer August Komendant, came up with this long-span system. It was more expensive than conventional roof systems, of course, but Olivetti, says Kahn, "was not interested—any more than I was—in just buying something that would do".

An integral part of the roof from the earliest design studies was provision for skylights. Both Kahn and his client felt that natural light was essential for employees who would spend most of their daylight hours here. And windows in the exterior wall would have been visible to only a few of them. "So the roof became the window," says Kahn.

Of course, the cost of skylights—in terms of heat loss, heat gain, potential leaks, etc.—was recognized. Their net cost was reduced somewhat by making the same openings serve as air intakes for unit air conditioners (which occur at 120-ft. intervals) and exhaust outlets for process heat and fumes.

The specific form of the skylights went through a series of versions before the final design was worked out in collaboration with Italian Architect Renzo Piano, a specialist in light plastic structures (Mar. '70 issue). Each of the 20-ft.-square skylights—which were assembled on the ground and hoisted into place by helicopter—consists of 16 pyramids of fiberglass-reinforced plastic. A translucent blue coating on the outer surface of the skylights filters and diffuses the sunlight (eliminating sharp shadows in the work area) and masks the tendency of the plastic to turn yellow.

In addition to light and air, services such as water supply and electricity are also brought into the work spaces from above. All of the volume above the level of the lighting fixtures is typical of Kahn's "servant spaces," except that it is not isolated, visually, from the activities it serves.

Kahn and his staff took particular interest in organizing this visible network of utility





In offices and cafeteria, as in production areas, the structural system and utility lines are exposed. The two levels of the office portion can be seen from the main entrance (top, left). In the offices (left) carpeted floors and partitions of cork and oak contrast with bare concrete. In the cafeteria (right) exhaust ducts from the central kitchen and air-conditioning ducts—all of satin-finished stainless—form a gleaming sculpture. The exterior wall of the offices and cafeteria (top, right) follows the angular outlines of roof umbrellas and skylights, and is striped with windows where they are needed.

FACTS AND FIGURES

Olivetti Corporation of America, Factory Building, Harrisburg, Penna. Architect: Louis I. Kahn (C. Gustav Langford, job captain). Consulting structural engineer: Dr. August E. Komendant. Engineers: Keast & Hood Co. (structural), Paul H. Yeomans, Inc. (mechanical and electrical). Landscape architect: George Patton. Interior designers: ISD. Managing builder: Barclay White & Co. Building area: 270,000 sq. ft. Cost: not available.

(For a listing of key products used in this building, see p. 69.)

PHOTOGRAPHS: Ezra Stoller, except p. 22, (left) Erich Hartmann-Magnum, (middle) Richard Q. Hofacker.

lines. All pipe racks and hangers are suspended from points that were predetermined in the design of the structural umbrellas. Pipes and ducts span 20 ft. between supports; lighting fixtures and other equipment are supported on a grid of light steel beams criss-crossing the ceiling at 20-ft. intervals. Kahn would have preferred a system of cables to serve the purposes of these beams, which obstruct the view of the concrete canopy above, but a workable cable system could not be designed and fabricated in time to meet Olivetti's tight construction schedule.

In the cafeteria, the system of suspended utilities—executed just as Kahn wanted them—turns out to be an exciting environmental sculpture. Thin steel members supporting light fixtures and speakers form a delicate grid below big twists of cylindrical stainless steel duct. In the offices, ducts and other services could be scaled down—and had to be, since a mezzanine level in this part of the building requires headroom.

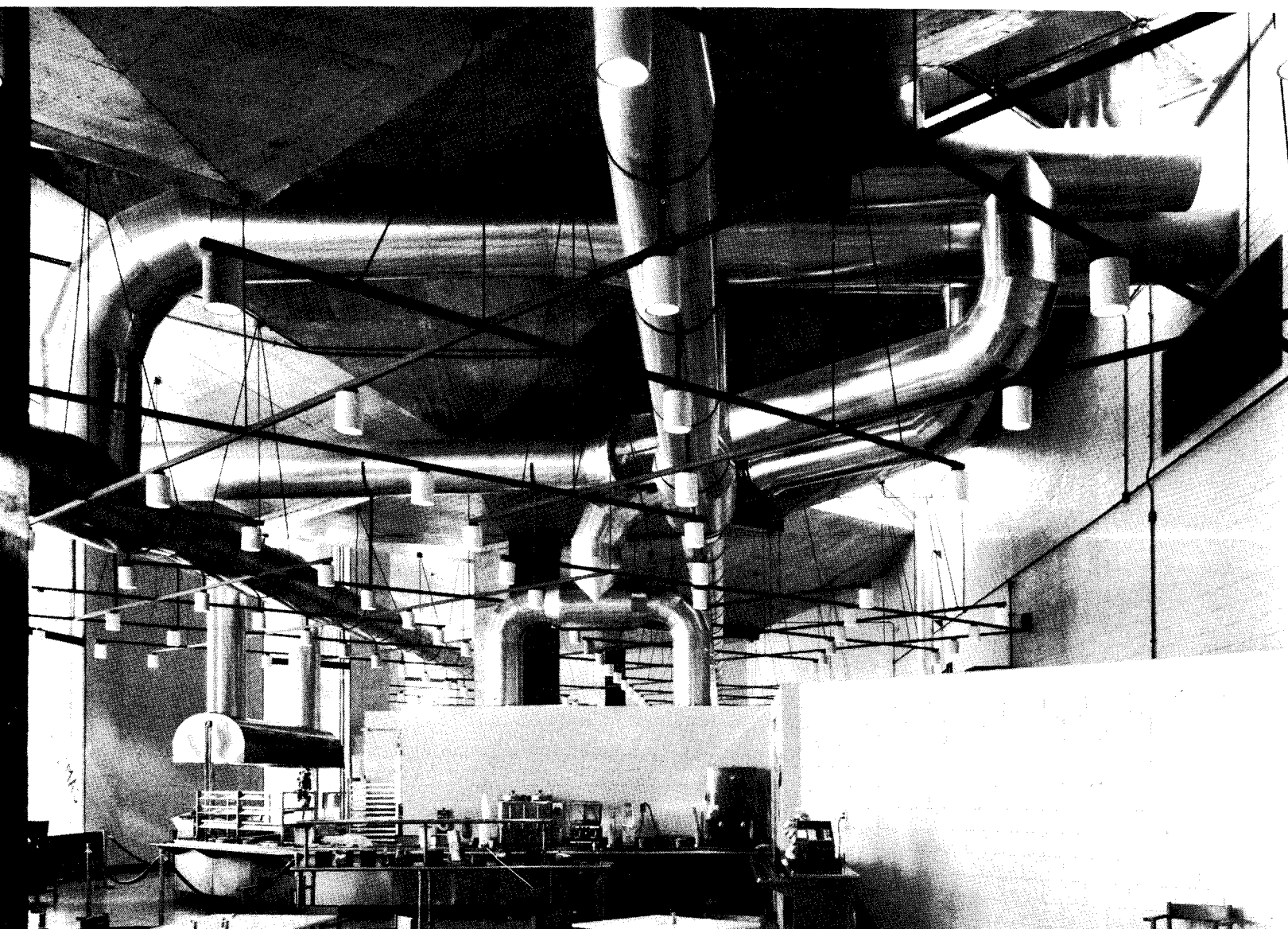
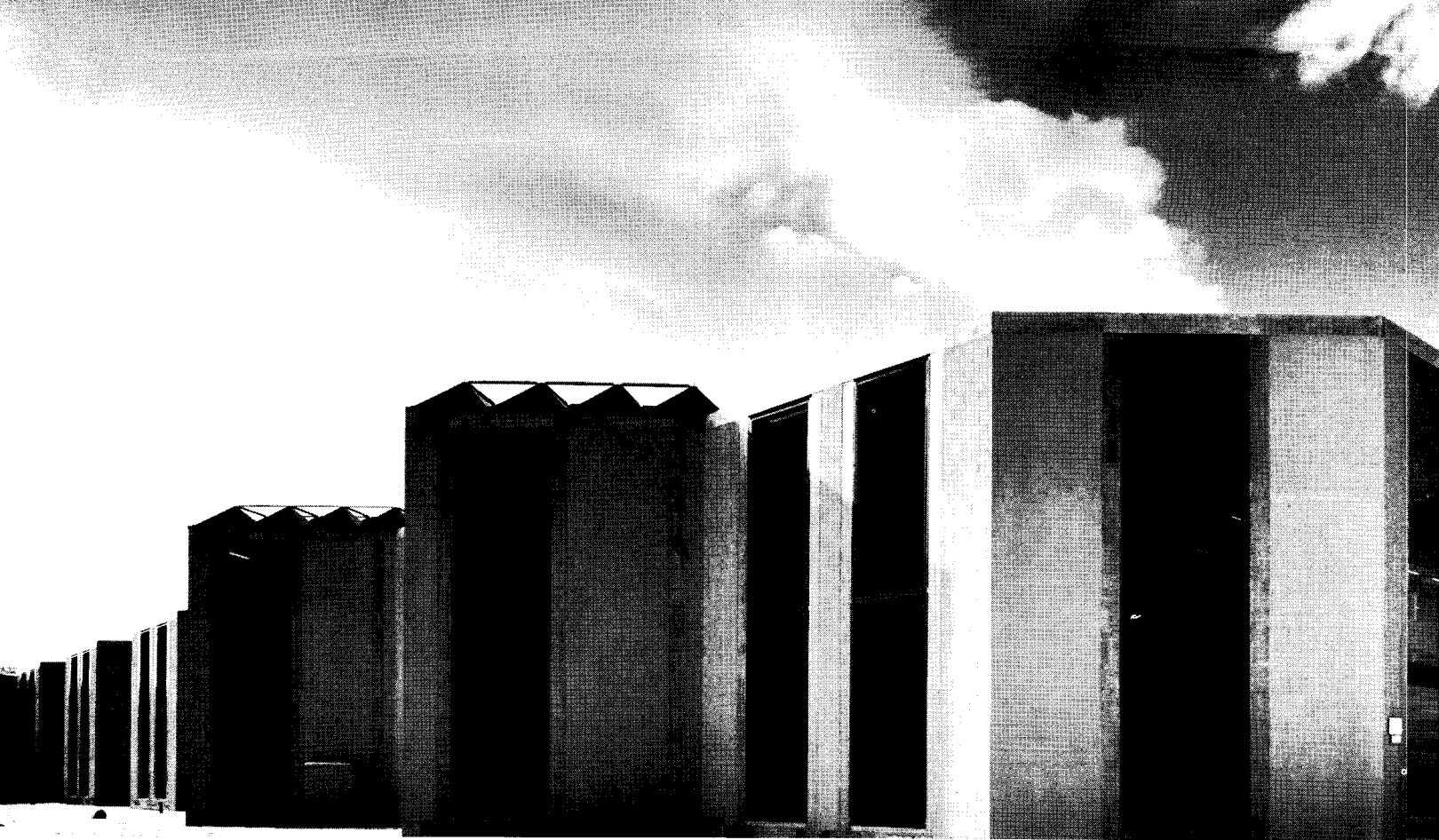
Only in the offices and cafeteria are the exterior walls important sources of light. The windows here are, however, part of a uniform wall system that extends—with occasional windows—around the entire plant (except for a temporary wall on the west, where the building is to expand).

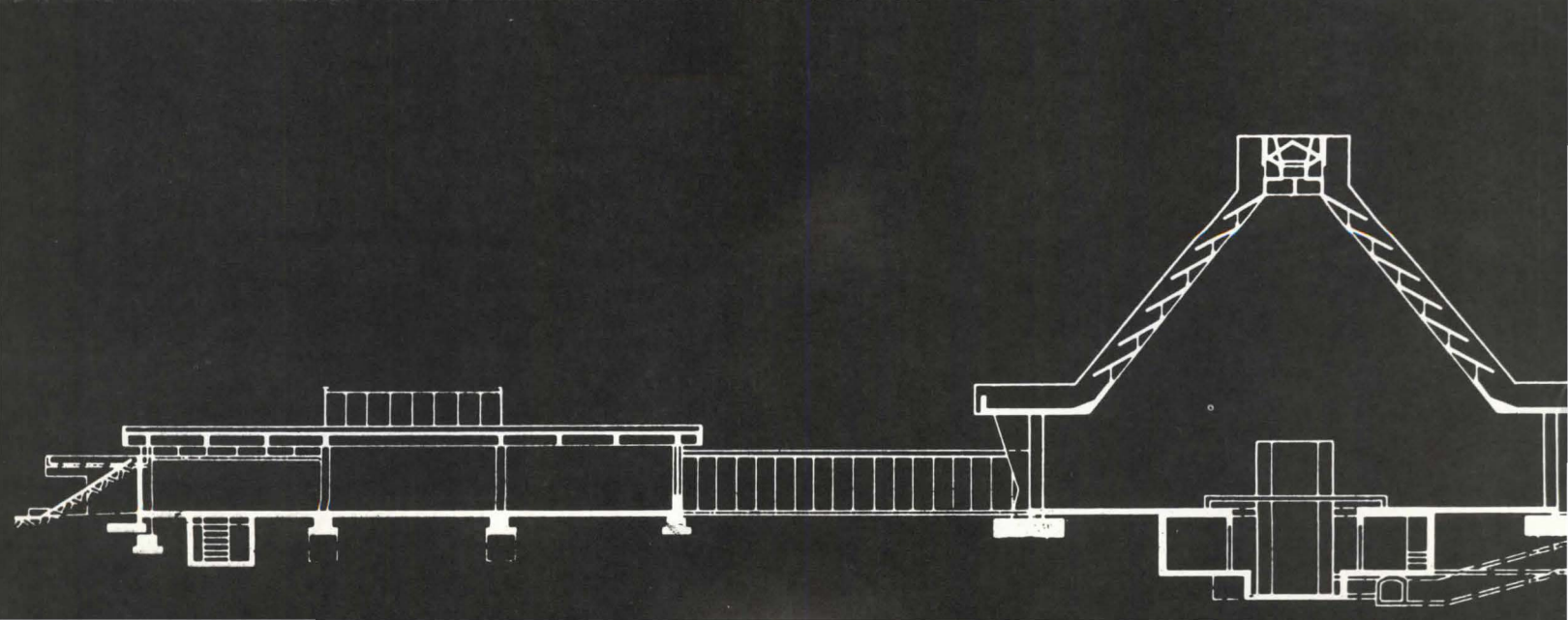
Since the walls occur under the high edges of the structural umbrellas—28 ft. above the floor slab—a rigid, yet inexpensive, wall system was needed, which could include large windows. Kahn's solution was to develop a precast strut which serves both as a window jamb and as bracing for simple concrete block walls.

Kahn is not quite satisfied with the quality of these precast struts, nor with other instances of disappointing workmanship or substituted materials in the plant. He is not accustomed, he admits, to the tight schedule of factory construction, where small delays can mean serious commercial disadvantages.

These pressures aside, Kahn is enthusiastic about Olivetti's commitment to excellence; "They do honor the artist, and they honor the building that will carry the message. They were always interested in that."

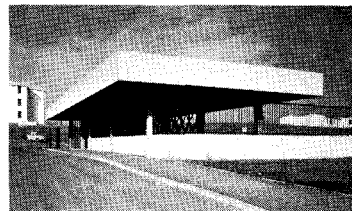
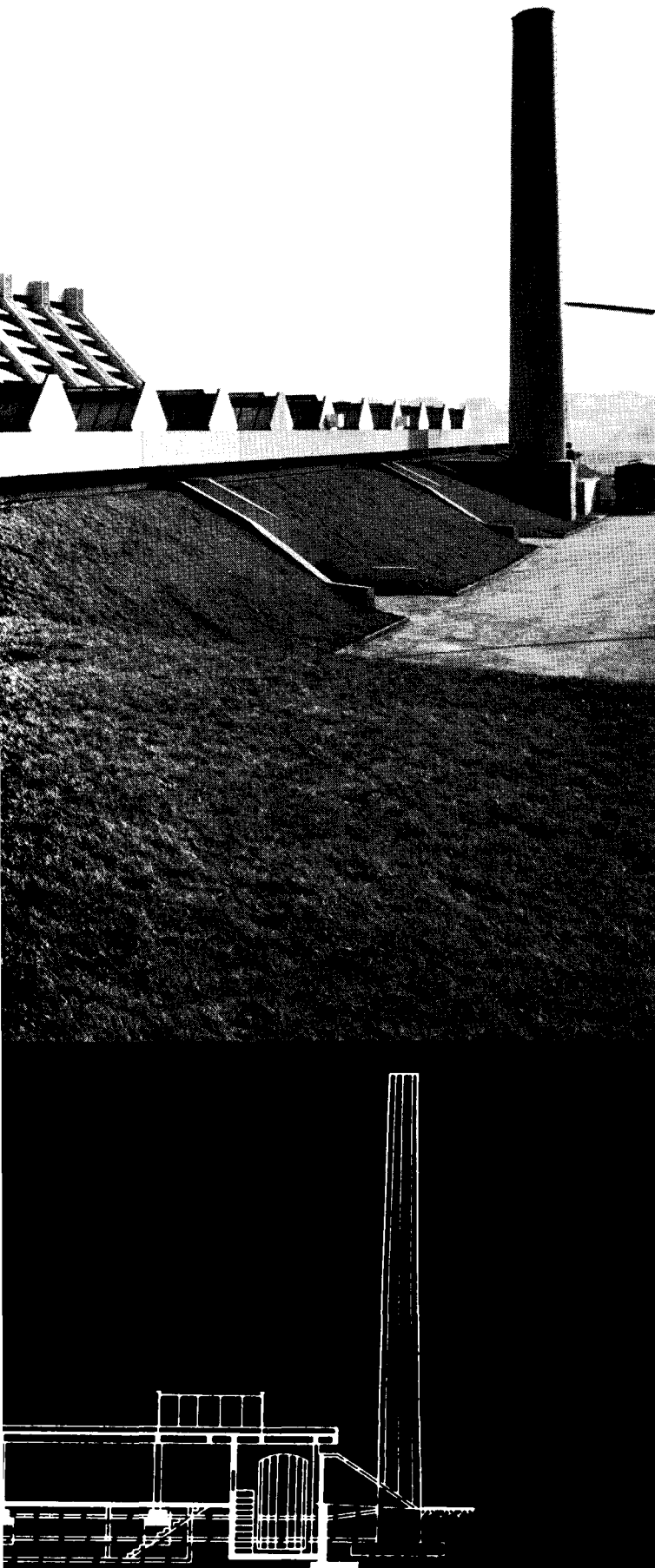
—JOHN MORRIS DIXON





GIANT FUME HOOD

German glass-blowing plant is a monument to its designer and a credit to its client



View of the "Glass Cathedral" from the west shows precast U-shaped roof girders, spaced about 30 ft. on centers. Flat-roofed wing in foreground, with monitor-type skylights, contains storage and receiving facilities. Gatehouse (above) is crucial checkpoint for the plant, for industrial espionage is a reality here. Section (bottom, left) shows relationship of great hall to the supporting wings on either side, and the courtyards between them. Cool air is drawn in from both sides, and exhausted through louvers in the roof structure.

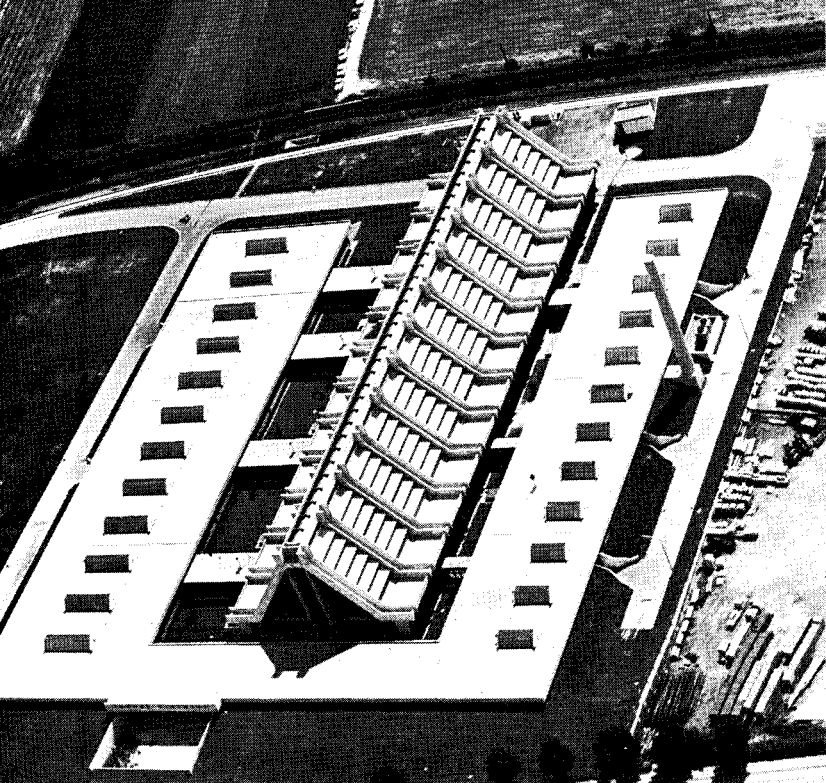
The precast concrete "A-frame" shown on these pages is one of the last buildings designed by the late Walter Gropius. It is known, locally (in Amberg, in southern Germany) as the "Glass Cathedral"; it houses the automated glass-blowing equipment of the famous Rosenthal porcelain and glass manufacturing firm; and it was opened last June, about a year after the death of its designer. It is one of the most interesting structures of his fruitful career.

The building consists of three elements: the louvered "Glass Cathedral," about 88 feet wide, 354 feet long, and 54 feet tall at its highest point. This is the main glass-blowing hall. To the west of this great hall, there is a flat-roofed structure that houses receiving and storage facilities. And to the east of the A-frame, there is a roughly matching flat-roofed structure used for glass-finishing.

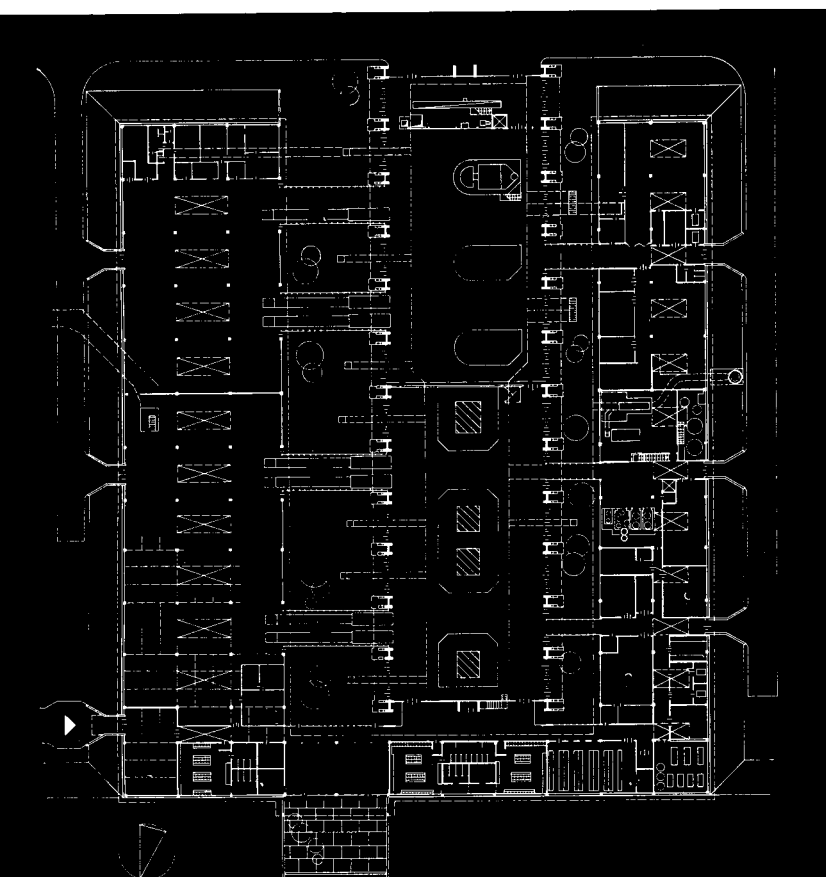
The three elements are separated by interior courts, and linked by "tunnels" containing conveyor belts as well as pedestrian passages. The section at bottom, left, explains the relationship of those three separate but related structures.

What makes the Rosenthal glass factory so successful is the expressive integration of function, form and structural frame. The most serious problem presented by the manufacturing process is the intense heat of the glass in liquid form—it is worked in the open at temperatures ranging from 1,292° to 2,372° Fahrenheit. In order to cope with this heat the architects shaped the factory so as to make it act like a huge fume hood, drawing in cool air from the open courtyards at either side of the "Glass Cathedral," and exhausting the hot air through the louvers within the A-frame roof, and through the skylight slot that runs down the ridge of the roof. Exhaust fans within that ridge reinforce the natural flow of hot air. Workmen on the floor of the hall feel the cool air entering the factory from the landscaped courts on either side—and the huge concrete roof above seems like a parasol that keeps out the sun and the rain. It is perhaps the first glass factory ever built that is pleasant to work in.

The structure that makes up the concrete parasol was almost



Aerial view from the northwest shows the neat disposition of three functional elements—glass-finishing shops at left, "Glass Cathedral" in the center, and receiving and storage facilities at right. The walled courtyard extending from the building is located outside an employees' lounge (see also plan, below). The flat-roofed supporting wings are partially buried in the site, and further concealed behind berms. The roof surfaces, visible from neighboring residential structures, were patterned with differently-colored gravel. Manufacturing hall (right) now contains some storage spaces for raw materials. This area will accommodate two additional ovens when the factory expands.



entirely precast. The columns, H-shaped in cross-section, are set 30 feet on centers. Massive brackets on top of these columns receive the precast ribs. The latter are U-shaped in cross-section, measuring approximately 6 ft. wide by 5 ft. deep. The ribs came in three sections, the heaviest of which weighed 35 tons. The A-frame was pin-connected at the top, and the precast concrete louvers span the distance between the ribs. A more conventional precast system was used to frame the lower, flat-roofed wings on either side of the great hall.

The siting of the building is particularly interesting. Because a nearby railroad siding is depressed below the grade of the residential neighborhood, the architects in effect buried the factory in the ground so as to bring its floor level closer to the level of the tracks, and so as to minimize the impact of the industrial structure upon its surroundings. Only the "cathedral roof" rises dramatically out of the site; the lower, flat-roofed wings are largely buried or hidden behind berms. The flat roof surfaces, which are visible from nearby residences, were kept neat and clean, and broken up with fields of black and white gravel. The monitor-type skylights that punctuate the flat roofs in a regular pattern add further interest to these large surfaces. The aerial view at top, left, explains the general effect.

The Rosenthal glass factory was designed for future expansion: the addition of two more automated ovens, and of corresponding finishing space. The open-ended hall, and the loosely linked system of supporting wings, should make such expansion relatively simple. Meanwhile the building stands complete, an impressive monument to the intelligence and humanity of its great architect.

FACTS & FIGURES

Rosenthal Glass Factory, Amberg, Germany. Architects: TAC / Walter Gropius & Alex Cujanovic (Royston Daley & Henry Ortega, associates in charge). Associate Architect: Rosenthal Technical Dept. General Contractor and Engineers for structure: Dyckerhof-Widmann. Building Area: 101,506 sq. ft. Cost: \$2.1 million. PHOTOGRAPHS: Louis Reems.





LONGER WHITE LINE

Long Island cosmetics
plant grows more
graceful as it expands

The streamlined Estee Lauder Laboratories, a landmark along the teeming Long Island Expressway since its completion four years ago (March '67 issue), has now become even longer and sleeker (before and after photos, opposite). The architects—Davis, Brody & Associates and Richard Dattner & Associates—designed the plant for unlimited expansion; now they have had a chance to show the validity of their design by doubling the size of the structure.

The entire plant is in two layers: a concrete-walled base, painted near-black and largely concealed by berms, and an overhanging upper layer, clad in white porcelain-enamel panels.

The smoothly rounded corners were actually devised to make all panel joints simple and uniform. The panels were clipped onto the steel wall framing so that they could be easily unclipped and re-used as the plant expanded, and that is exactly what happened.

Most of the added space is used for warehousing; the capacity of any production department could be increased by working a second shift, but storage capacity could be increased only by adding space. Office area also more than doubled, and the expansion took the form of a second block, set back behind the line of earth mounds (below) so that the executive block and visitors' entrance retain their prominence.

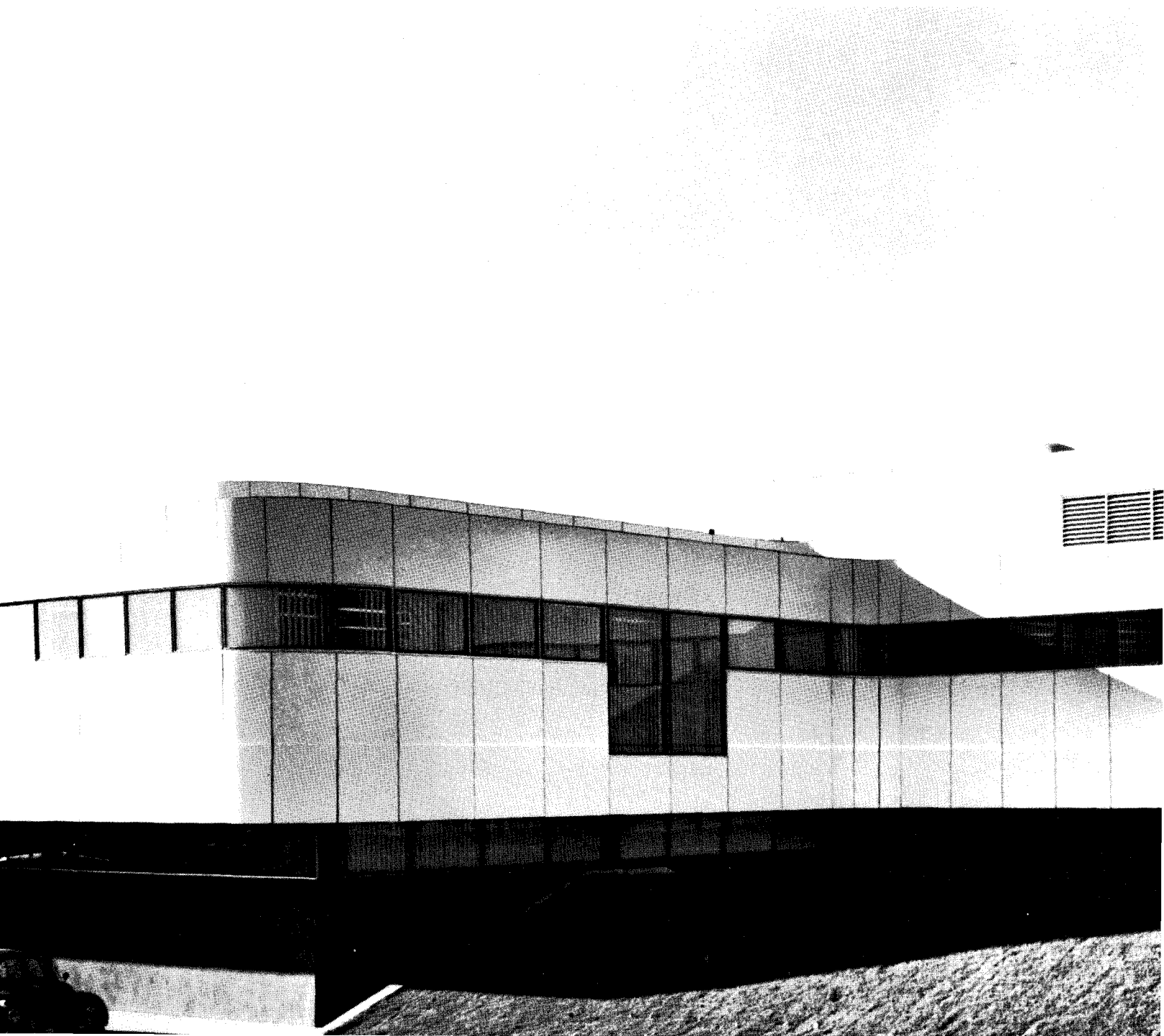
(A new cafeteria below the new office space faces an enclosed garden.) One function—the computer room—increased to four times its original size, and is now housed in its own projection at the east end of the building.

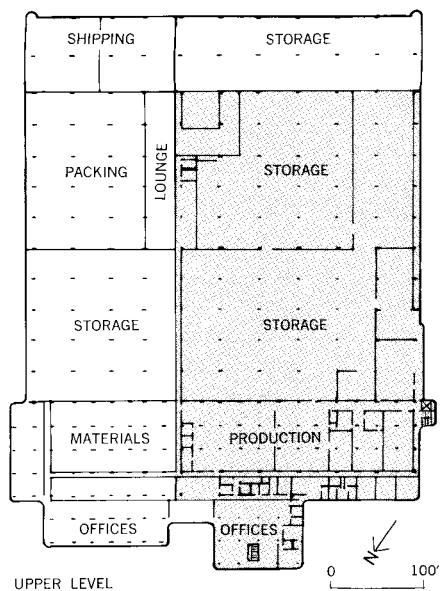
FACTS AND FIGURES

Estee Lauder Laboratories, Melville, N. Y. Architects: Davis, Brody & Associates and Richard Dattner & Associates (Richard L. Carpenter, project architect). Engineers: Goldreich, Page & Thropp (structural); Wald & Zigas (mechanical). Landscape architect: A. E. Bye & Associates. General contractor: W. J. Barney Corp. Area of addition: 150,000 sq. ft. Cost: \$3,500,000.

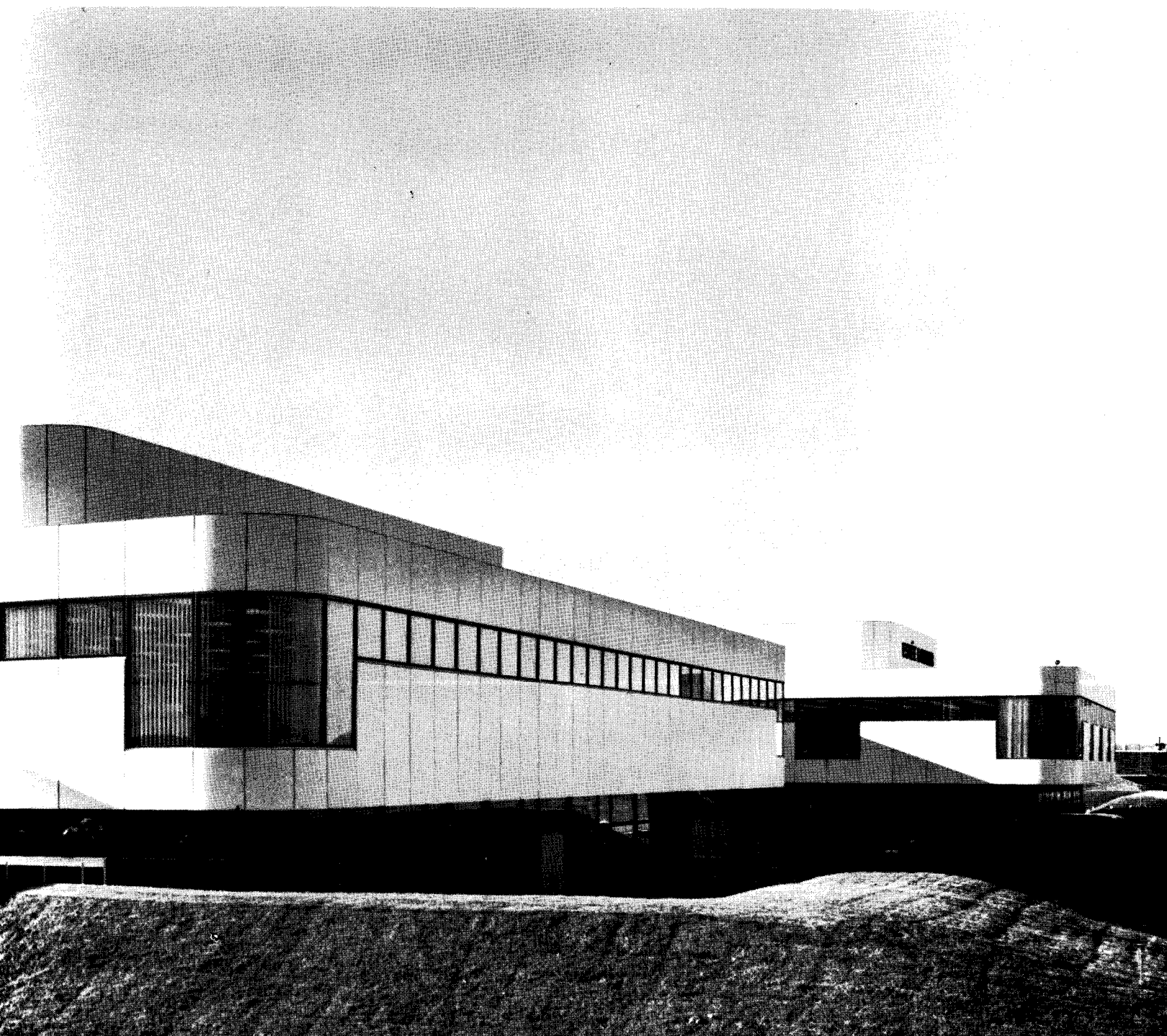
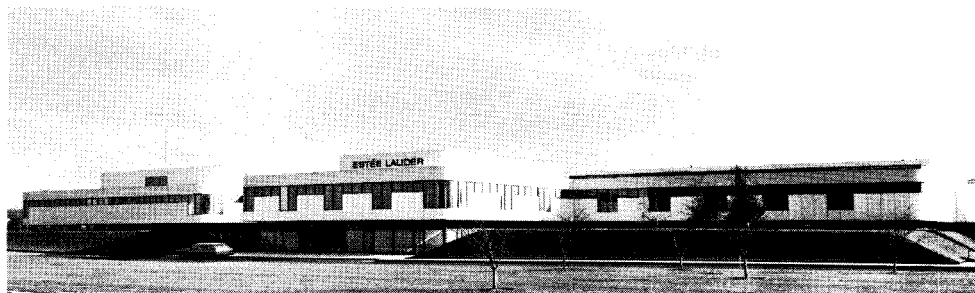
(For a listing of key products used in this building, see p. 69.)

PHOTOGRAPHS: Norman McGrath.





UPPER LEVEL



ORDER AT THE DOCKS

New Jersey shipping terminal has variety of control functions in one compact structure

A gray, dilapidated tract of New Jersey waterfront has been transformed into a lively composition in black and white with the development of the Seatrain container shipping terminal at Weehauken. The hub of the terminal is a black, multipurpose building by Skidmore, Owings & Merrill of New York; stretching out from it are rows upon rows of white trailer bodies, with spare graphics by Chermayeff & Geismar (who also designed the black-and-white treatment of Seatrain's ships).

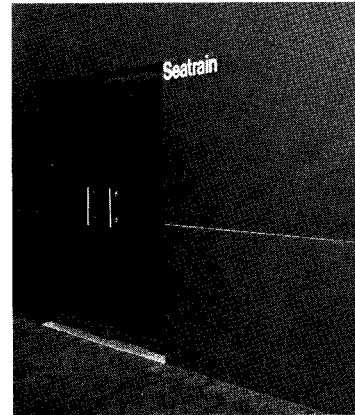
It was SOM's idea to put three distinct activities of the terminal—separated at other container shipping terminals—into a single, compact building. The structure is at once an inspection station for trailers entering and leaving the terminal, an on-the-spot repair shop for the trailers (which are Seatrain's property), and a headquarters for the company's worldwide container shipping activities.

Putting these diverse activities into one package saved vital ground area, of course. ("There was not a square foot to spare," says Martin Growald of SOM.) It also allowed the office portion to serve as a canopy for the inspection lanes (which required overhead catwalks for inspection from above, as well as shelter from the weather). And repair docks at this location can be easily converted into additional inspection lanes, should the terminal expand.

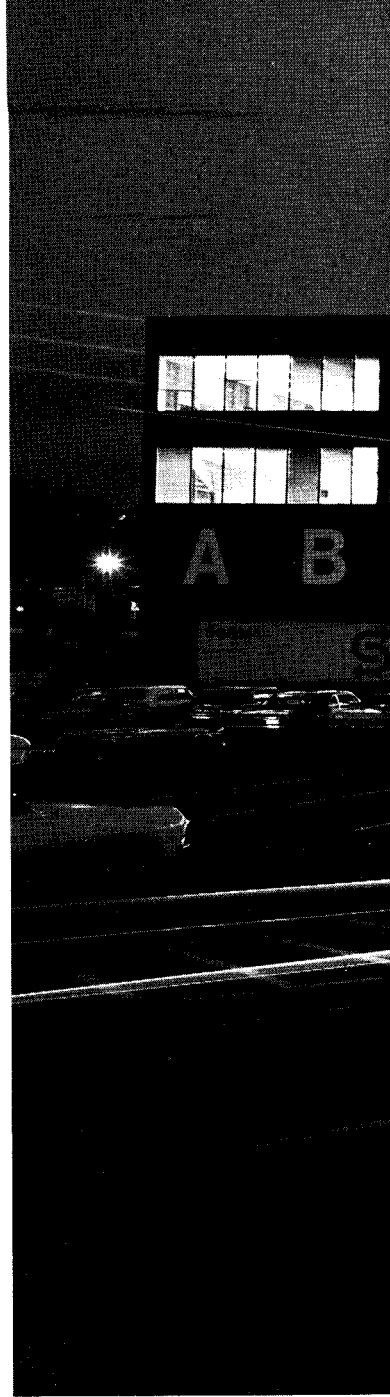
Since the building was to be, in effect, both the entrance to the terminal and its nerve center, there was a temptation, says Growald, to make a symbolic gateway of it. But any attempt at monumentality would have looked puny against the backdrop of the ships and the huge, handsome cranes (costing about \$2 million each) loading them. SOM's approach, instead, was to make the building into the simplest possible box, with mechanical rooms and stair towers added to the top and sides.

Precision and regularity are relied upon to give the small building the distinction it should have as a destination for truckers driving hundreds of miles. "For these drivers," says Growald, "we wanted the building to represent punctuality and efficiency."

For the terminal's 250 office employees, the building had to



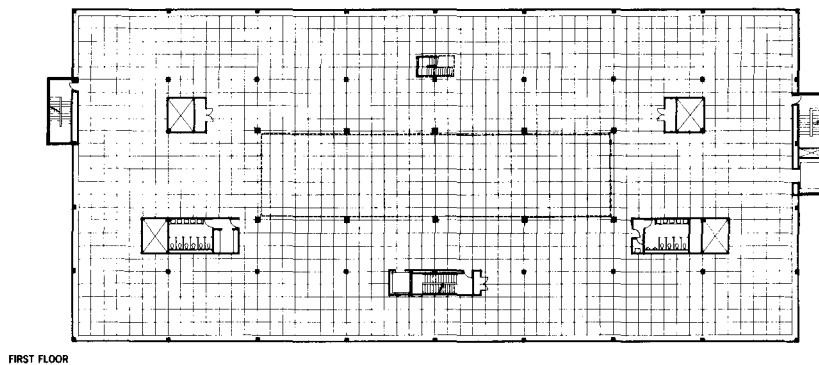
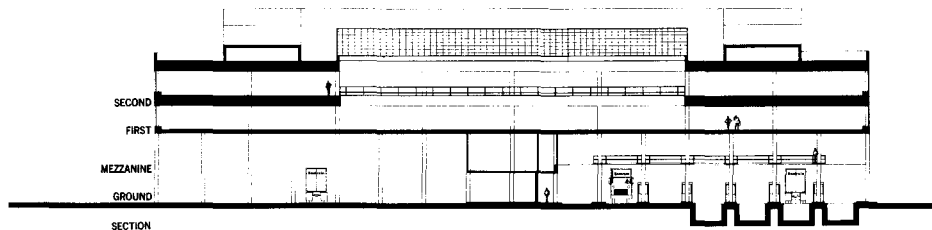
The understated exterior of the Seatrain terminal building includes a main entrance (above) that is simply a rectangular hole in the black-anodized aluminum skin. For trucks, the whole building forms an entrance to the terminal (above right), with inspection lanes numbered and repair docks lettered. The opposite side of the building—with graphics in reverse order—can be seen by travelers on the busy Lincoln Tunnel approach ramp (extreme right).



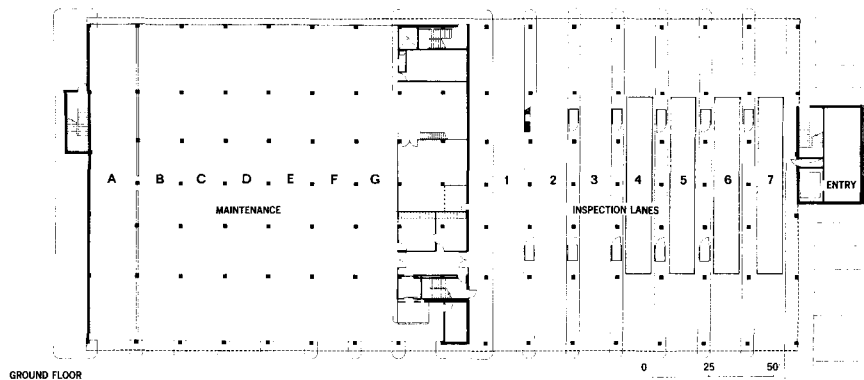




Second-floor reception area looks inward toward skylighted central well.



FIRST FLOOR



GROUND FLOOR

provide an oasis amid the grimness of the immediate area. (There are exciting views of Manhattan and of the ships in dock, but every place within walking distance is decidedly inhospitable.) The oasis is a skylighted central well running through the two office floors. Finding this luminous open space inside such a plain-looking structure is an exhilarating surprise—like entering a 19th-century shopping arcade, which it resembles in size and shape. Here, of course, the materials are all of the latest, 20th-century kind. The skylight is glazed with mirrored, tempered glass which transmits only 8 per cent of the sunlight that strikes it.

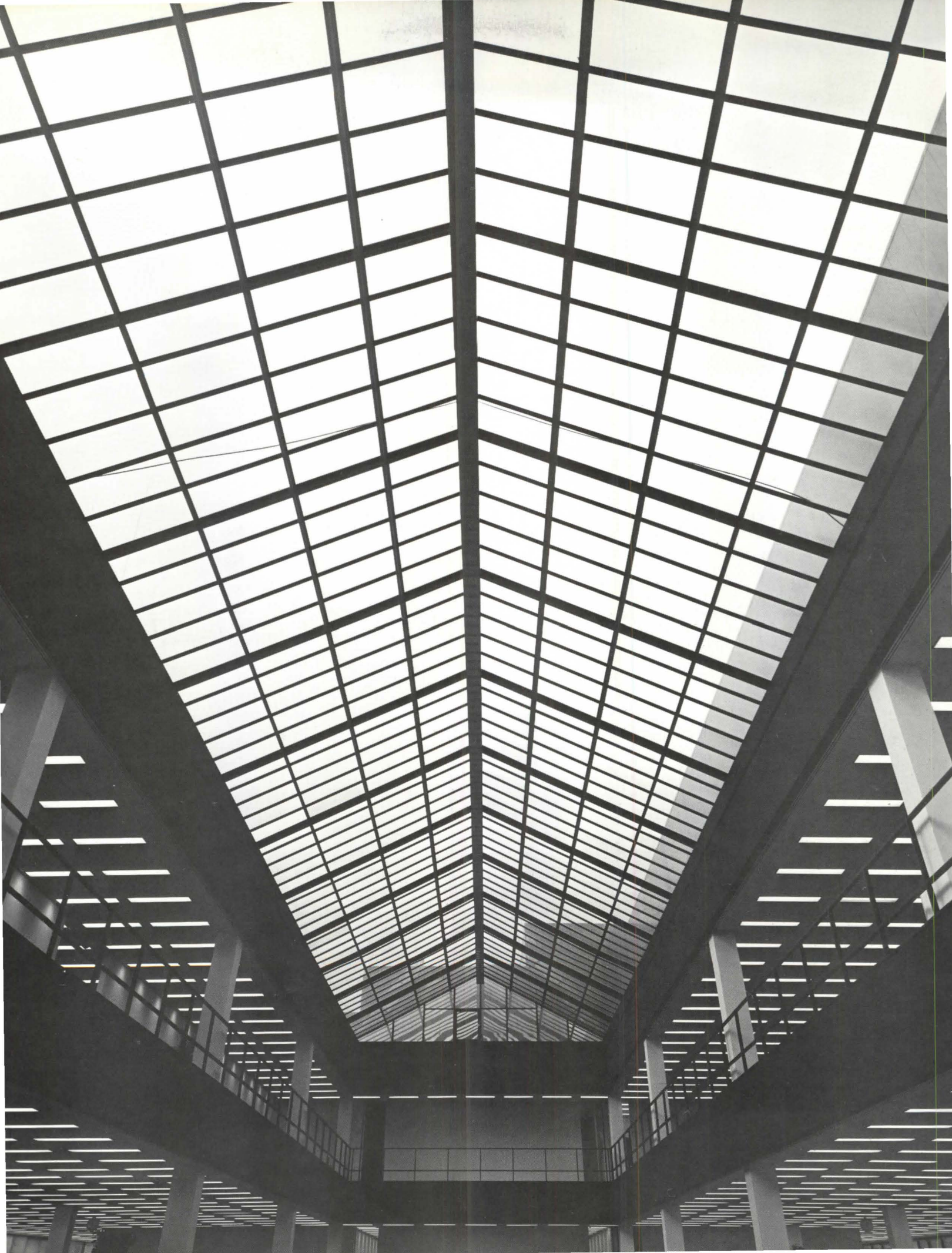
One surprising fact about the central well is that the 4,250-sq.-ft. floor area at its base is still unprogrammed. Eventually, if Seatrain maintains its remarkable rate of growth, this space is likely to be claimed for desks and filing cabinets. For the present, however, it is simply an expanse of gray carpet (a striking sight in itself, at this scale) waiting for whatever potted plants, seating, or amusement facilities the owners may install. Perhaps it can be left just as it is for noontime games.

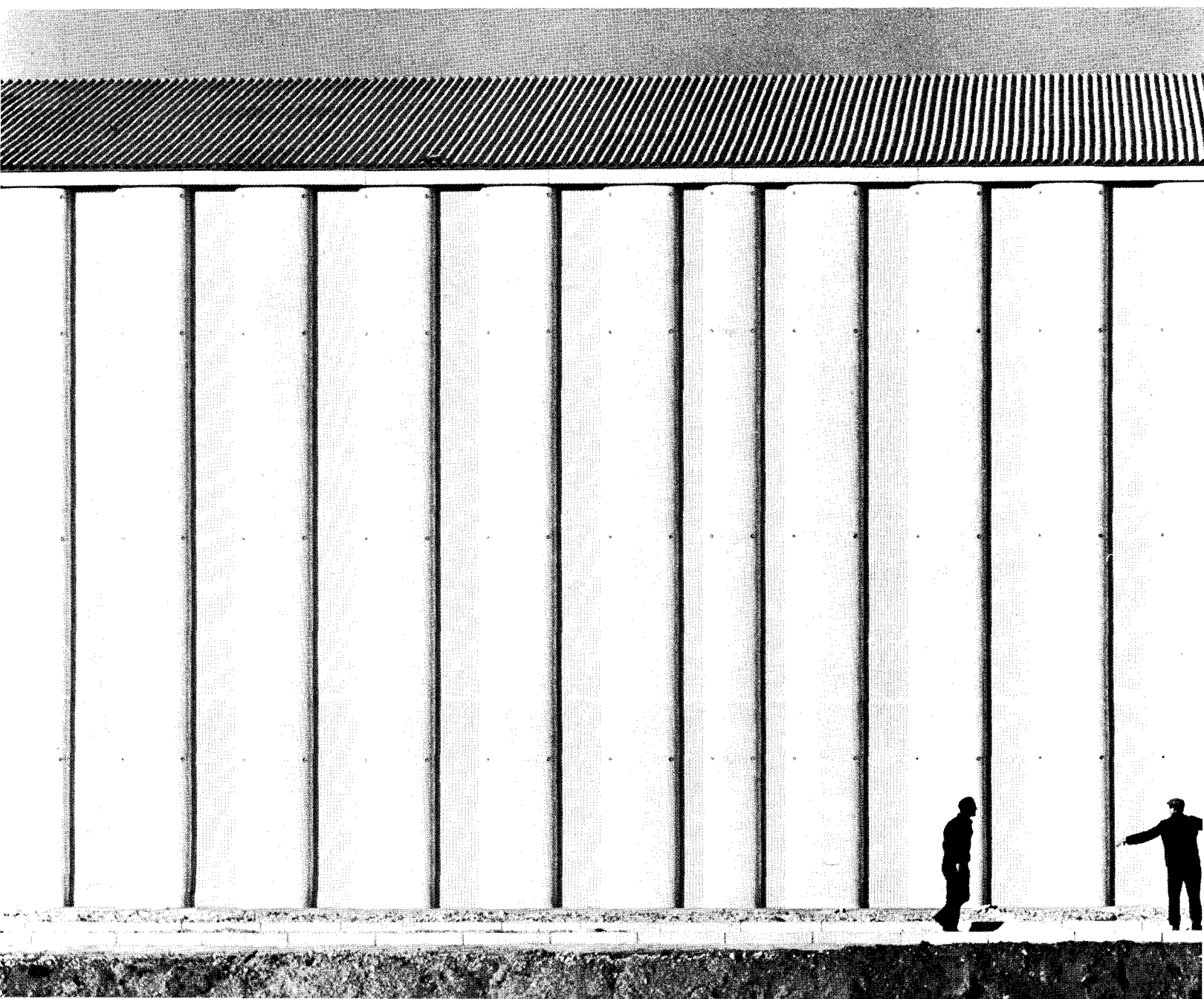
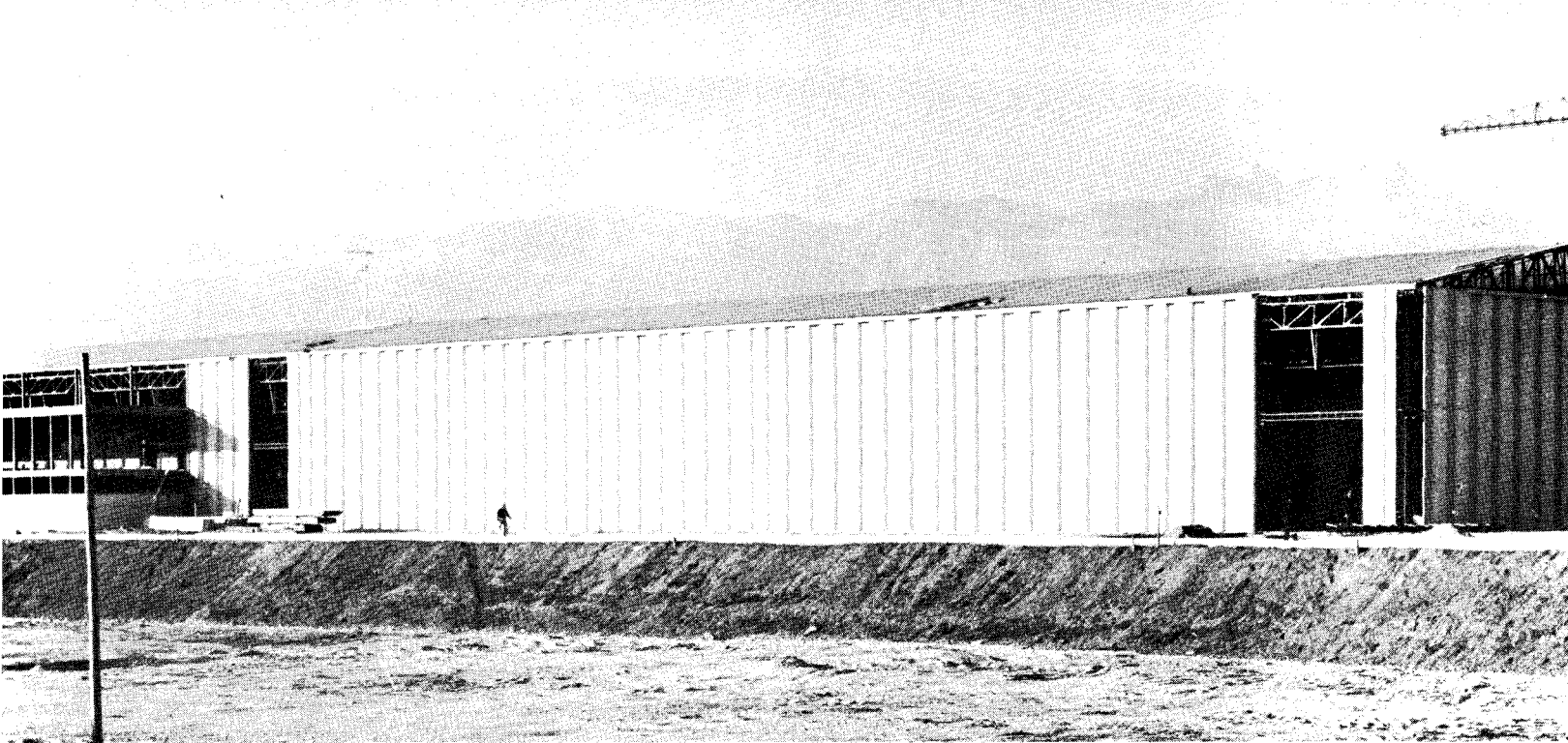
This structure has set the pattern for three other Seatrain terminals: one in Oakland, Calif., now nearing completion, and two others being designed for San Juan and Honolulu. The other buildings will be somewhat smaller than this one, since they will not include space for the international headquarters staff, (which accounts for almost half of the office staff at this location). But all of these buildings will have the same precise, SOM-designed details and the same bold graphics, symbolizing Seatrain's innovative, "systems" approach to the age-old shipping industry.

FACTS & FIGURES

General Administration Building and Terminal Facility, Seatrain Lines, Inc., Weehauken, N. J. Architects: Skidmore, Owings & Merrill (J. Walter Severinghaus, partner-in-charge; Martin C. Growald, design; G. Robert Spatafora, project manager; William R. Hvizdak, interior design). Engineers: Weiskopf & Pickworth (structural), Jaros, Baum & Bolles (mechanical). General contractor: Frank Briscoe Company. Building area: 122,608 sq. ft. (For a listing of key products used in this building, see p. 69.)

PHOTOGRAPHS: George A. Tice.





PRECAST PACKAGE

Italian warehouse by Gino Valle is enclosed with a simple and ingenious system of alternating panels

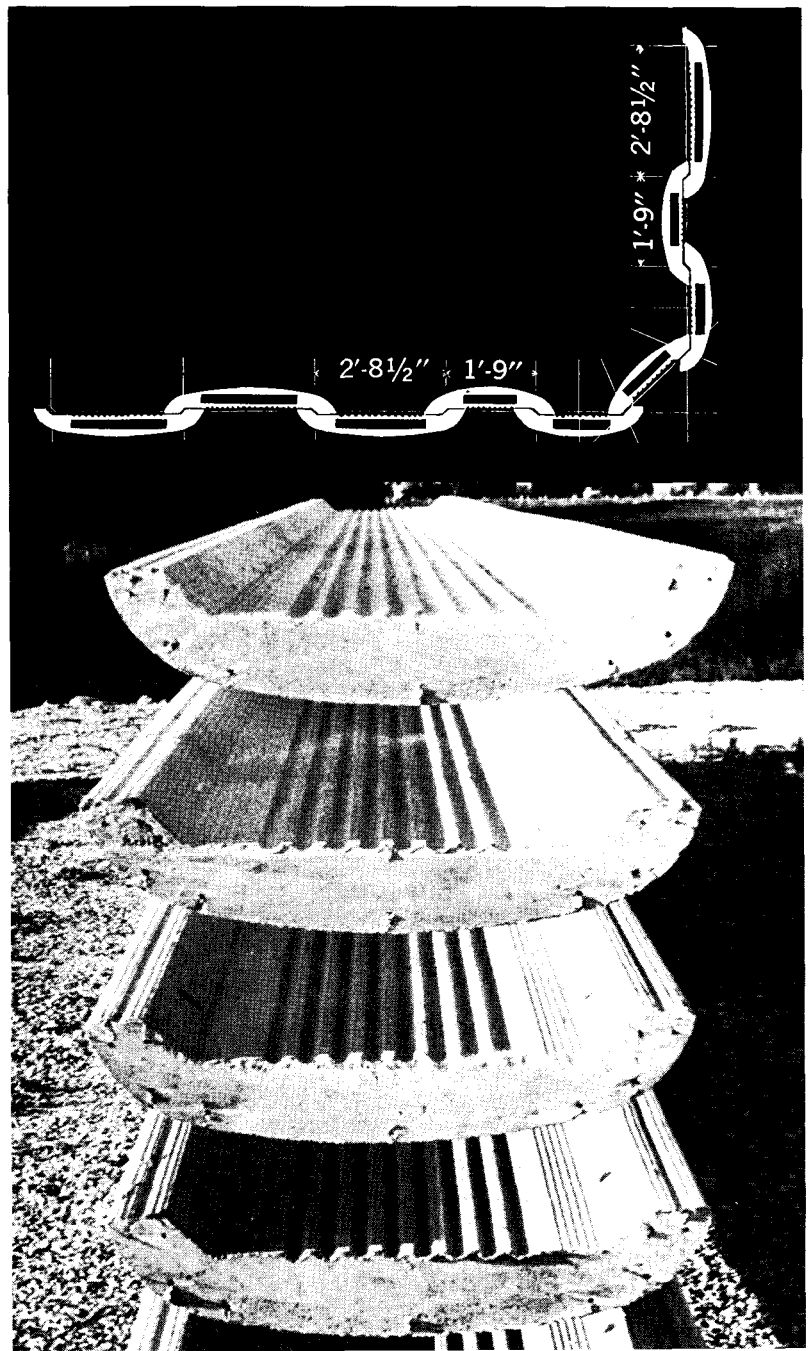
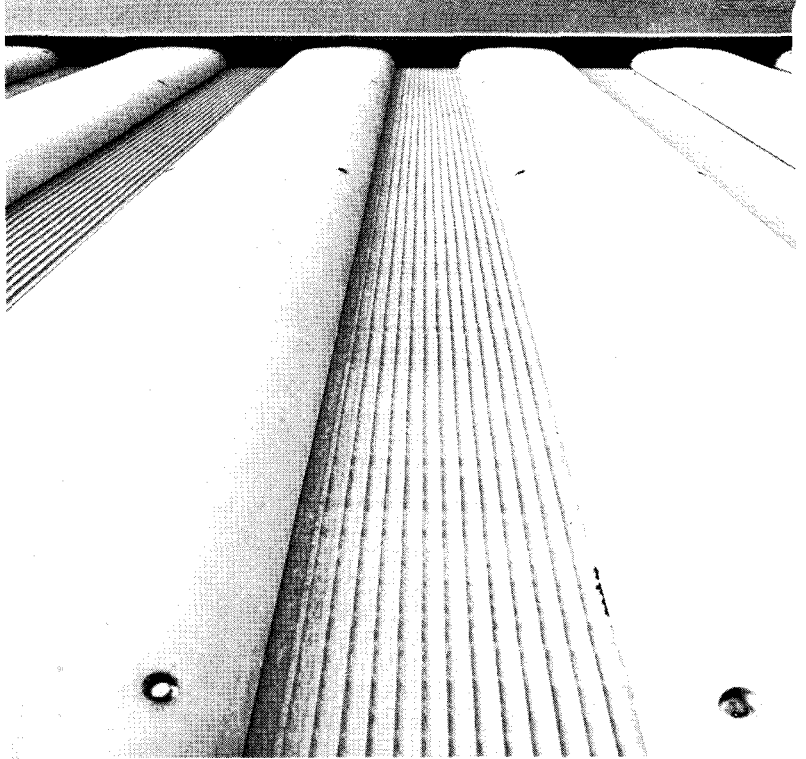
This is one of several industrial buildings designed by the Udine-based architect, Gino Valle, for Zanussi-Rex—a leading Italian manufacturer of kitchen equipment. In each of these buildings, Valle has attempted to develop a simple, logical, economical enclosure—sometimes of metal, at other times (as in this case) of precast concrete. The Zanussi-Rex warehouse shown here is one of Valle's best prototypes in this series.

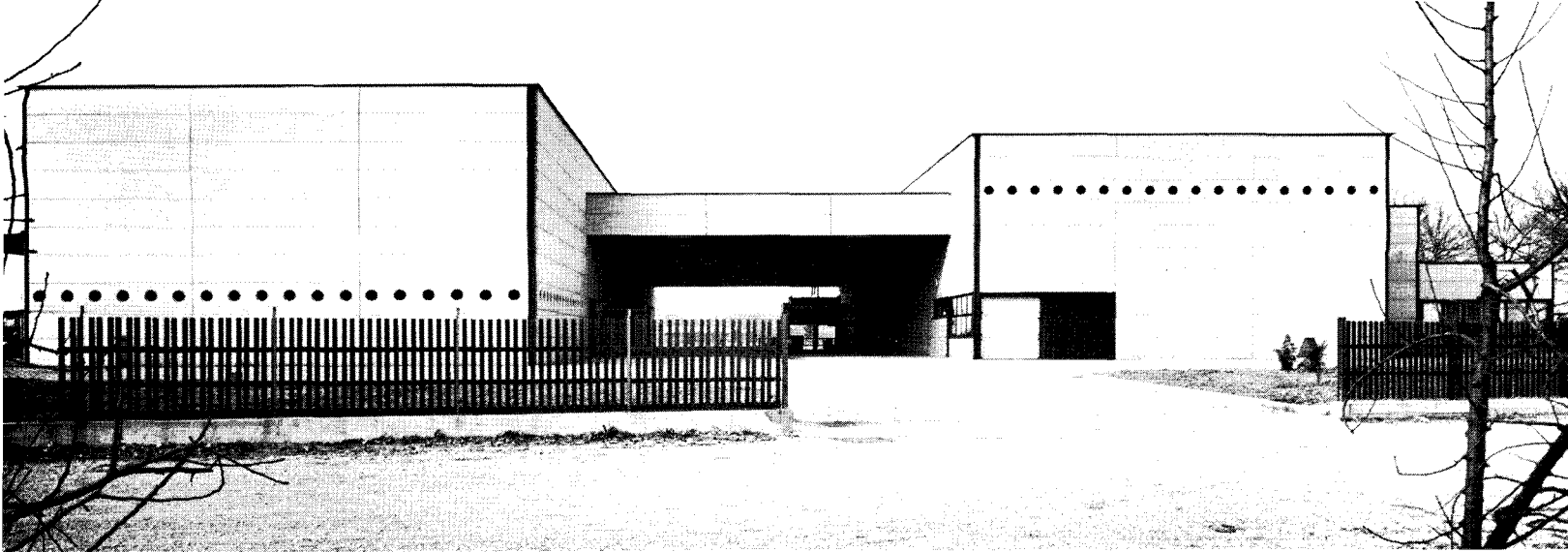
The precast concrete panels that enclose this warehouse are roughly tray-shaped in cross-section, and run the full height of the building. The drawing at right shows how they interlock, and how corners are turned.

The panels were precast in two widths: approx. 22 in. and 33 in., respectively. The inside surfaces are striated, the outside surfaces smoothly rounded—which accounts for the changes in pattern and texture noticeable in these photographs. The structural frame of this particular warehouse is steel, and the roof surface is a concrete tile. The concrete wall panels were pre-drilled, and bolted through to each other and to the steel frame. Because of its great simplicity and ingenuity, the wall system received one of the Italian National Prizes in Architecture several years ago. It has been used by Valle in a number of structures since then.

FACTS AND FIGURES

Zanussi-Rex warehouse, Udine, Italy.
Architect: Gino Valle.
Fabricators: Sipre S. p. A.





TWO-PART ASSEMBLY

Italian distillery has a prefabricated cavity-wall system to help cool the plant's interior spaces

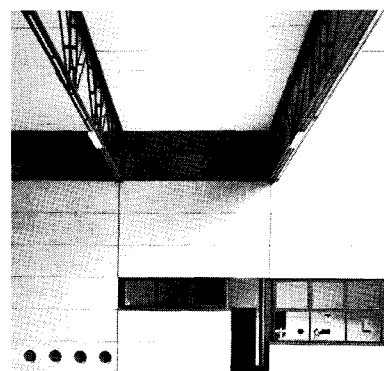
The Pighin wine distillery, also designed by Gino Valle, is located near Udine, in northeastern Italy. It consists of two large sheds, connected by an entrance porch. The exposed steel structure is covered on the outside with horizontal panels of prestressed concrete, in single layers except in spaces where additional insulation was needed.

The shed shown at right in the view above contains the vats (see also photo, below). This space has the double skins

of prestressed concrete, and the cavity between the skins forms a "chimney" that is ventilated through circular grilles in certain bands of panelling. Except for some offices, the main interior spaces are lit through skylights. Artificial lighting consists of exposed fluorescent tubes mounted on the bottom chords of steel trusses.

FACTS AND FIGURES

Pighin Wines Distillery, Risano (Udine), Italy. Architect: Gino Valle.

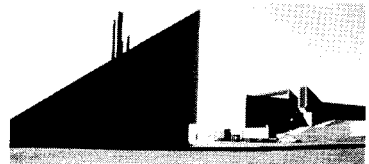


WEDGE OF BRICK

Minnesota power plant is part of a gateway leading into a university campus

The clean, triangular brick box at right houses the power plant for the University of Minnesota's campus at Morris. Its scale is deceptive: the end view shown here is actually 30 ft. tall above grade.

As the section shows, the form was derived from a reasonable and compact arrangement of the required equipment. The building is framed in steel, with a brick skin, a concrete block interior, and wood planking on steel for the roof. The slope of the roof helps the natural flow of warm air out of the space (see grilles in photo at right). The roof, incidentally,

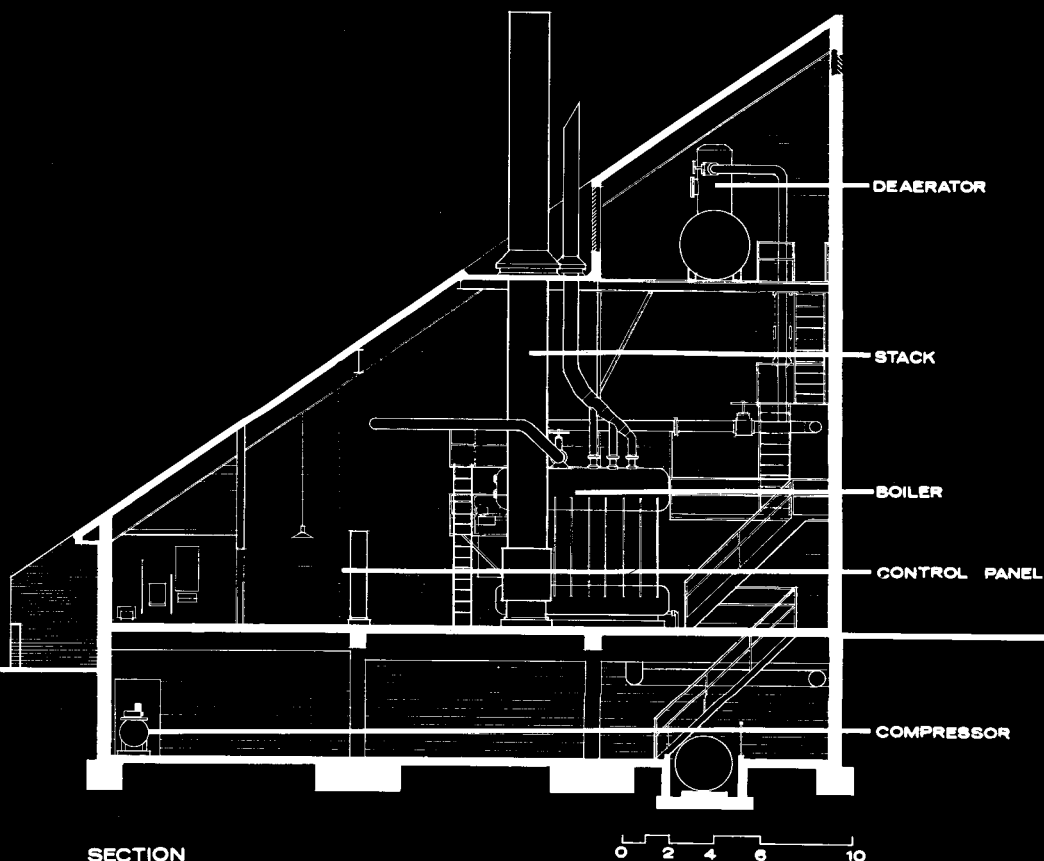
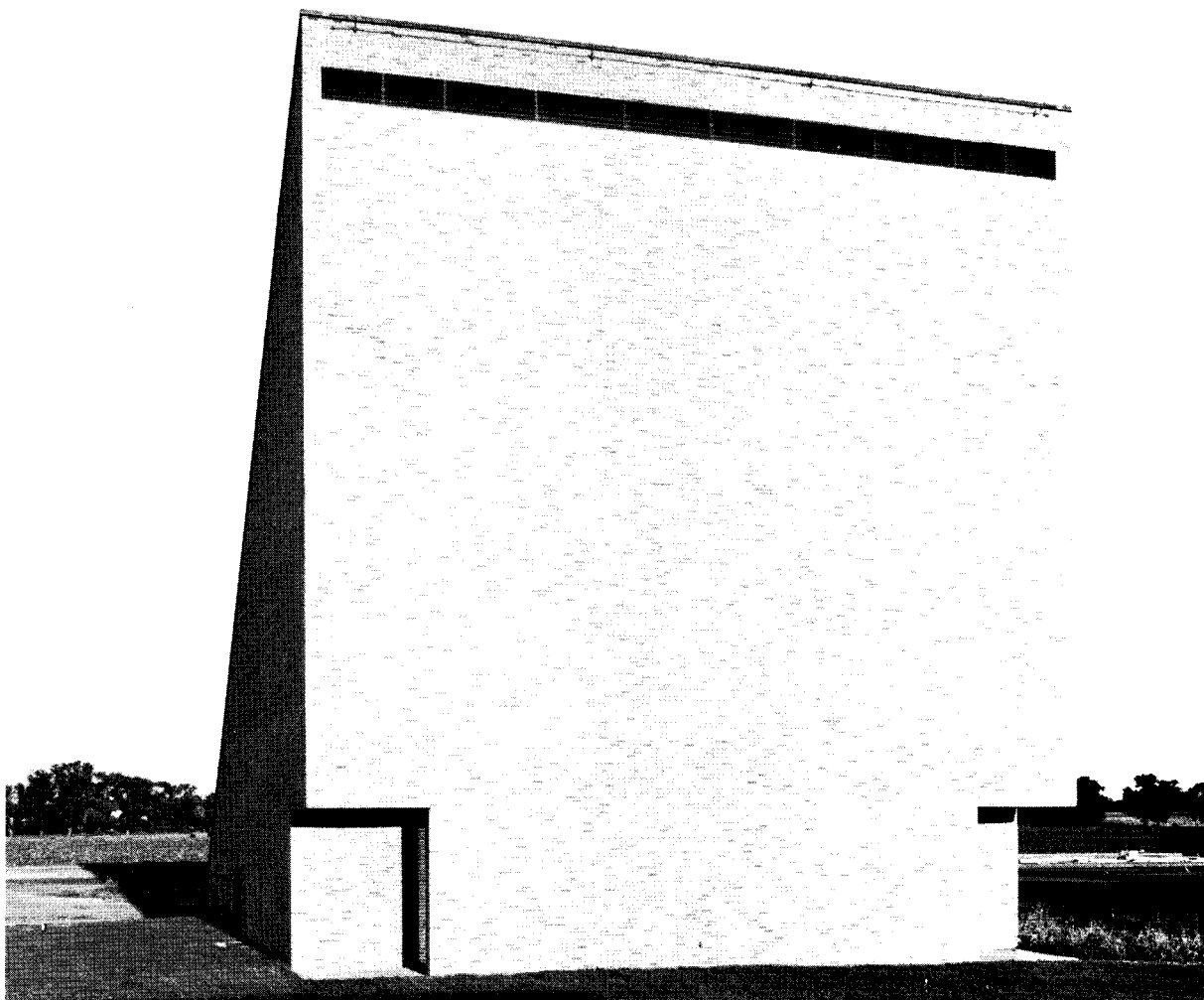


is finished with copper-coated stainless steel.

The campus at Morris is merely a branch of the University of Minnesota system—a small branch that is destined to grow quite rapidly. One of the requirements for this building was that it should form part of an important gateway into the campus. The location of the plant near a major highway, and opposite a large Physical Education building, offered an opportunity to turn this brick box into one element of a sort of "throat" that leads into a major plaza which will serve the proposed field house and adjacent grandstand seating facing a football field. The architects—Cerny Associates—have designed this grandstand also, and its design relates to the triangular silhouette of the power plant.

FACTS AND FIGURES

Power Plant, University of Minnesota, Morris, Minnesota. Architects: The Cerny Associates, Inc. Engineers: Helmick & Lutz.



CRISS-CROSSED STEEL FRAME

British electronics plant is a prize-winning example of neat industrial detailing

The electronics factory shown here won the Industrial Architecture Award presented by the London *Financial Times* a couple of years ago. It is located in Swindon, in a major industrial park that also boasts a factory designed by Marcel Breuer and Robert Gatje. In citing this one-story steel building, the *Financial Times*' jury noted that the factory "does a number of things with disarming ease. . . Structure, cladding, internal divisions . . . and services are well coordinated, so each contributes appropriately to the whole."

The building was designed by a team of three architects—Norman Foster, Wendy Foster, and Richard Rogers—whose work is becoming increasingly visible on the British scene. In this building, the architects used readily available industrial components and assembled them in a rational and neatly detailed way. The structural steel frame, painted white, is set in 40 ft. square bays, filled in with plastic-coated, corrugated steel cladding—or glazed steel sash (along one entire side of the building not shown here).

Down the center of one of the interior bays of the building runs a single service trench containing all required wiring and piping (including hot water to feed into floor heating coils). Secondary service lines, embedded in the concrete floor slab, branch out from this service trench; and provisions have been made to extend this trench as the factory expands.

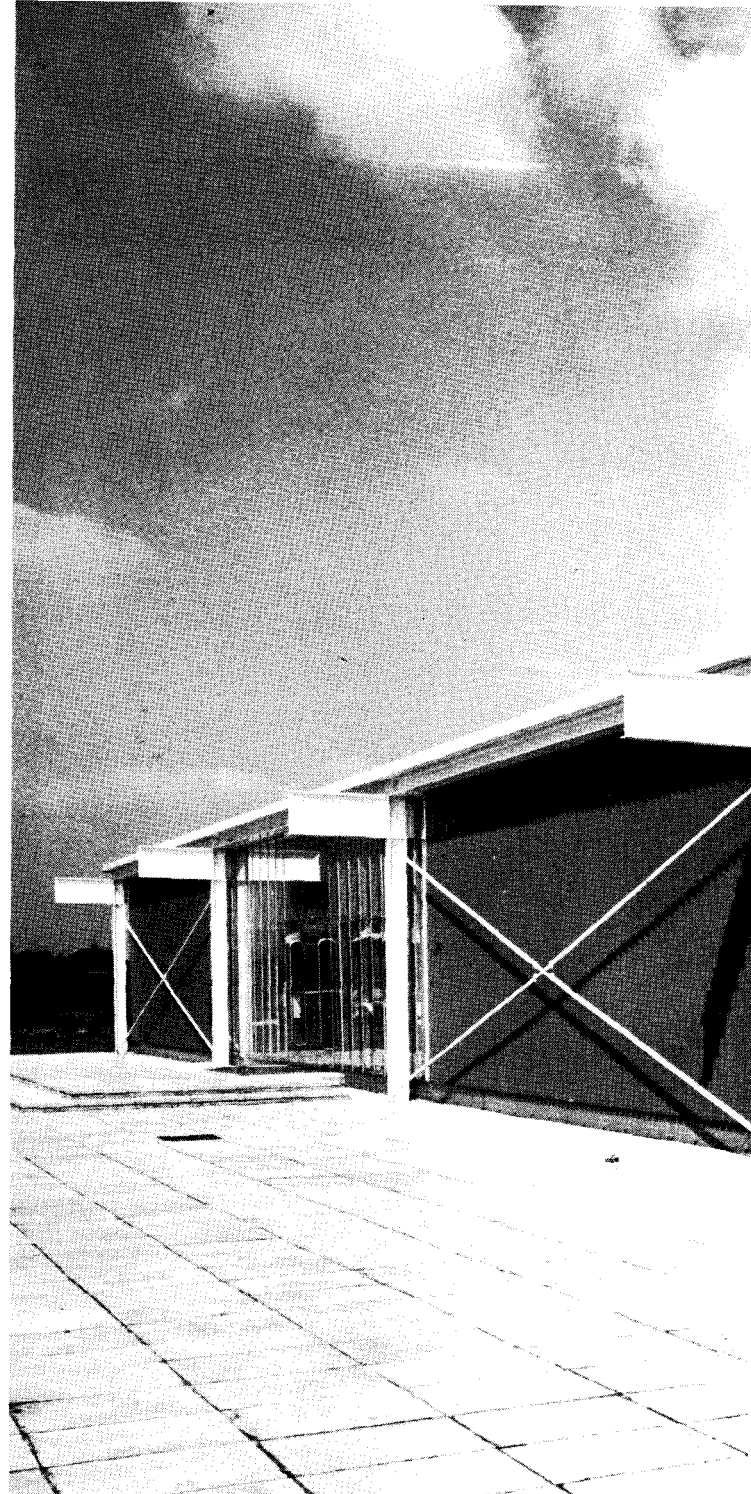
The initial size of the plant is 200 ft. by 160 ft., and about one quarter of this space is occupied by offices—the rest by storage and manufacturing facilities. The lighting is neatly integrated with the corrugated roof decking and spaces are divided off with aluminum-framed and glazed partitions.

In commenting on the award, the British critic Ian Nairn praised the building as being "genuinely modest, unassuming but not characterless, and a perfect fit for its users. . . You never consciously notice the architecture, yet it is controlling everything with complete discretion."

FACTS AND FIGURES

Electronics plant, Reliance Controls Ltd., Swindon, England. Architects: Norman Foster, Wendy Foster, Richard Rogers. Quantity surveyors: G. A. Hanscomb Partnership.

PHOTOGRAPH: Wm. J. Toomey





HOUSING ABANDONMENT

A national survey on the dimensions of the problem, its causes, and the directions most likely to be effective in reversing the abandonment process.

Housing abandonment as a national phenomenon attracted public attention only a few months ago, focusing on the massive and dramatic crisis in New York City. Concern over the problem is now spreading rapidly. Some cities have instituted stringent code enforcement; some have stepped up demolition of derelict structures. The Housing Act of 1970 provides for "demonstrations with respect to abandoned properties." It is doubtful that any of these approaches will stem abandonment, however, because of the lack of information on the causes of abandonment, the pace at which it is proceeding, the persons and interests affected (and the degree to which they are affected) and the relationship of abandonment to other aspects of the urban environment.

This survey of the nationwide aspects of housing abandonment was undertaken for several reasons. It was feared that a large proportion of basically sound housing was in various stages of abandonment, which would severely limit housing opportunities for low-income and minority families who have few alternatives. It was also feared that code enforcement, demolition and other municipal strategies might accelerate the abandonment process and exacerbate the housing shortage for low-income people.

With limited funds and time, the survey has nevertheless attempted a comprehensive approach: 1) a basic identification of the processes by which abandonment occurs, 2) an analysis of the extent of the problem and 3) an approach to solutions. It is hoped that the study will assist community organizations, private groups and government to stem the abandonment of desperately needed housing.

Seven cities were selected for intensive study—Atlanta, Ga.; Chicago, Ill.; Cleveland, Ohio; Detroit, Mich.; Hoboken, N. J.; New York, N. Y.; and St. Louis, Mo. (Atlanta, where abandonment is not operative, and Detroit, where it is not widespread, served to test the objectivity of our procedures.)

The survey included visits to each of the cities: 1) to conduct

intensive interviews with local planners, community leaders, public officials, bankers, and real estate brokers and 2) to visit problem neighborhoods. The focus was narrowed to specific neighborhoods in each city. Initial observations had indicated that abandonment is concentrated in specific neighborhoods, characteristically ones in which poverty and social pathologies have become worse since 1960 both in absolute terms and in comparison to the rest of the city. These areas have been termed "crisis ghettos."

The hypothesis of this study is that final abandonment of buildings is directly related to the processes culminating in crisis ghettos.

We do not consider any vacant building an abandoned building; nor do we believe all inhabited buildings are non-abandoned. When a landlord no longer provides services to an occupied building, or pays taxes and mortgages, it is clear that the building is uninhabitable by all but desperation standards. It can be considered finally abandoned. When a building is temporarily unoccupied or will be demolished to make way for another useful purpose, it cannot be considered finally abandoned.

Abandonment is a process with final and intermediate stages. In the stage before final abandonment the owner no longer sees any economic potential, yet his rental income remains higher than his operating costs. When he or the previous owner have exploited the property of its value or found themselves in an untenable market situation, the property is of little or no interest to a land speculator or a builder of new housing. Accumulated costs of unpaid taxes, deferred maintenance, burdensome mortgages, and the repayment of demolition expenses (if at public expense) make the property an economic liability. Even if these costs can be written off and the property acquired for no cost, it is typically unmanageable since it is located in a high-crime, high-vandalism neighborhood with economically unstable tenants, and final abandonment is assured.

Our survey indicates that abandonment is both a cumulative and a self-generating proc-

Undertaken by the National Urban League and the Center for Community Change during the summer of 1970, this national survey was released to the press earlier this month. Project staff is as follows: David Stoloff (Director); Richard Devine and Tom Gale (National Urban League); Hortense Gabel and Andrew Mott (Center for Community Change); Dr. Raymond Franklin and Dr. Emanuel Tobier (Queens College, City University of New York). The Forum article is condensed from the survey's opening chapter.

ess occurring in many low-income and ghetto neighborhoods where the real estate market has collapsed but the demand for shelter remains high.

Housing abandonment might not be a problem if ample good housing existed even for the poorest families and if abandonment affected only the least habitable housing stock. But with a housing shortage, and with people living in housing of poorer quality than that being abandoned, it is a problem. Abandonment might not be so serious if it were not part of a socially destructive process that makes entire neighborhoods and, in some cases, entire cities virtually uninhabitable.

Information gathered from the seven surveyed cities will indicate the national scope of the problem.

Chicago: The survey focused on two areas — Woodlawn and Lawndale. Woodlawn underwent racial transition from white to black in the late 1940's/early 1950's. Conventional mortgage financing became unavailable about 1955. Some of the slack was taken up by exploitative mortgage syndicates formed by brokers and management companies. Abandonment has been noticeable for at least the past five years and an estimated 15-20 per cent of the housing has been abandoned. The declining population is primarily poor, unemployed, welfare-subsidized.

Lawndale underwent racial transition over a three-year period in the late 1950's, accompanied by a virulent form of "blockbusting" which left the Negro buyers with impossible financial commitments. Even though Lawndale's housing stock is of excellent original quality, abandonment is widespread, probably equalling or exceeding the level in Woodlawn.

The spread of abandonment is a major concern to public officials. However, the city's response—code enforcement and demolition—appears to be exacerbating the problem.

Cleveland: Eastern Cleveland (Central, Hough and Glenville) was our focus. Racial change beginning in the mid 1950's moved through Central, on to

Hough and most recently to Glenville, accompanied by land contract sales and absentee ownership similar to the experience in Lawndale. Housing was subdivided to produce income to pay inflated mortgages; code enforcement since 1960 has forced deconversion with consequent loss of income, and has precipitated some of the abandonment.

A special census in 1965 indicated that Central and Hough had been virtually depopulated of stable middle-income Negro households. The crisis ghetto here is rapidly extending itself to Glenville and may absorb all of eastern Cleveland.

Conventional mortgage lending ceased in eastern Cleveland in the early 1960's and abandonment became noticeable during 1965-66. Today no conventional investment funds flow into this part of the city, and it is doubtful that even special risk funds can be found.

Detroit: This city differs from the others in several ways. Blacks here have a high rate of homeownership; in 1970, 48.3 per cent of all black families in the city were homeowners. They are more evenly dispersed throughout the central city (but not the surrounding suburbs) than their counterparts in Chicago, St. Louis and Cleveland. And they are also, during non-recession periods, more prosperous.

The existence of a black middle class tied to homeownership in the central city, together with the continuing willingness of local financial institutions to grant conventional mortgages in black and transition areas, are, we believe, the principal reasons for the absence of a major abandonment problem. (There is, to be sure, some abandoned housing.) Further, the lack of a crisis ghetto is of prime importance. The middle class has deserted Lawndale and Hough and left a residual population of the poorest of the poor, but even in the poverty areas of Detroit the median income for four-person families was \$7,400 in 1968.

Detroit is not immune from a major housing crisis. If the national economy continues to decline, causing a cutback in the auto industry, black homeownership will be threatened.

Hoboken: An old industrial city of 45,000, it is within the New York-Northeastern New Jersey Metropolitan Area. Final abandonment over the past five years has been confined to the poorest neighborhood (increasingly Puerto Rican but with substantial numbers of Italians and Negroes), and has affected more than 10 per cent of its housing supply. Conventional mortgage funds either for transfer or improvement of residential property are almost unavailable throughout the city (except for one relatively high-income enclave). In the absence of a money market, most of Hoboken has entered the abandonment process.

There is little evidence of property exploitation over a short transitional period, as in Chicago and Cleveland. Disinvestment appears to have occurred over a long period, abetted by an undemanding housing code and only minimal enforcement of that.

St. Louis: This city is probably farther along toward total abandonment than any other central city in the country. The 1970 census shows a drastic population decline—19 per cent since 1960. In the two neighborhoods included in our survey there are thousands of abandoned buildings and no improvement program or public actions in sight.

The typical process of ethnic change, overexploitation of property, withdrawal of mortgage financing, deepening poverty, and final abandonment is most fully played out in St. Louis. Mortgage lenders freely admit having cut off all funds for the entire city with the exception of one all-white neighborhood. This "red-lining" extends to those suburbs where middle-income Negroes have gained entry.

In the West End section and the Model Neighborhood, abandonment was exacerbated by urban renewal clearance displacing 11,000 households during the mid 1950's. Exploitative practices similar to those in Chicago and Cleveland were the response to housing demand. Public policy has been one of demolition and sporadic code enforcement.

New York: Abandonment has become a political issue. Landlords are struggling to end rent

control, instituted during World War II, maintaining that it reduces profitability and forces them to abandon their property. (New York City is the only major American city with rent control.)

A recent study by George Sternlieb of a sample of rent-controlled buildings suggests that tens of thousands of dwelling units have been finally abandoned in New York. The Sternlieb study, done for New York City's Housing and Development Administration (*The Urban Housing Dilemma*, 1970), indicates that the inability to refinance and the level of real estate taxes are more significant than rent control in causing abandonment. Sternlieb provides strong evidence that abandonment is concentrated in the oldest and the economically least viable portions of the housing stock. Small, individually held, old law tenements are most likely to be abandoned.

But an independent study of East New York, where final abandonment is growing, indicates that the Sternlieb data provide only a partial picture. There, newer and non-rent-controlled housing has been engulfed by abandonment. The process follows closely that found in Lawndale and Hough—racial transition over a two- or three-year period (in this example, during the mid 1960's), exploitative sales, overly-extended buyers, withdrawal of investors, emergence of a crisis ghetto, and finally widespread abandonment.

Atlanta is a city primarily of single-family homes; home ownership predominates. Abandonment is not a problem. Mortgage finance institutions indicate no "red-lined" areas in the city. Property transfer and housing improvement loans continue to be available to all who are reasonable risks.

The Negro poor and working class are housed together in an undifferentiated ghetto — the crisis ghetto has not emerged. The middle-class Negro population is expanding into formerly white neighborhoods, but the old ghetto remains socially and economically viable. Atlanta substantiates our hypothesis that housing abandonment is related to the formation of a crisis ghetto.

Our survey has produced extensive evidence that entire neighborhoods housing hundreds of thousands are in advanced stages of abandonment. The phenomenon affects many but not all eastern and midwestern cities. The cities least affected by abandonment are those composed primarily of single-family homes, and those where mortgage markets do not practice neighborhood discrimination.

As our case studies demonstrate, the abandonment process involves a complex of factors and a sequence of events. Underlying the process are the dispersion and weakening of the urban economic base that began during World War II. Concurrently, there have been significant racial changes in many cities. These two factors have set the stage for the onset of the abandonment process. The exploitative response of local real estate markets to the heavy minority migration to central cities is the next identifiable phase. A third and closely related factor is the growing tendency of lending institutions to cut off all funds to ghetto neighborhoods. A fourth factor is the social and economic differentiation that has occurred within the spreading ghettos of many cities during the past decade, leading to the emergence of crisis ghettos where social problems are overly concentrated. A final factor is the lack of coherent and positive public policy toward older housing and neighborhoods.

The sequence of events has six major, identifiable steps: 1) decline in the area's socio-economic status, as middle class whites leave; 2) racial or ethnic change, as urban newcomers seek space; 3) property speculation and exploitation; 4) weakened market conditions, and emergence of a crisis ghetto; 5) *disinvestment*; 6) abandonment. The sequence between 1) and 2) is perhaps open to question; our information is not sufficient to be definitive. However, this does not affect the latter four steps, which, for purposes of understanding the total process, are the crucial ones.

Each step precedes the following one but does not necessarily lead to it. The entire process

varies from city to city and neighborhood to neighborhood. In Woodlawn it has taken a full 25 years; in other places, 10 years or even less.

It is instructive to look at the changes in metropolitan housing markets since World War II. Between 1940 and 1960, the Negro population of New York, Newark, Chicago, Detroit and Cleveland—to name a few key cities—grew by an average of 267 per cent.

Many local housing markets did not respond to the rapid growth of a low-status ethnic minority except to seize opportunities for exploitation. There were practically no additions to the supply of low-rent housing—in contrast to the tenement construction following the great European migrations. The Negro newcomers inherited the hand-me-down housing of groups who had moved up the status ladder. This existing older housing was then used much more intensively. Tenements were subdivided into rooming houses; individual homes were split into multi-family units.

Owners of such properties were able to realize a greatly increased income without having to invest in any substantial improvements. Speculative trading in such properties, often with (but typically without) the participation of conventional mortgage institutions, led to an inflation of values far beyond the actual depreciated replacement costs of the structures.

The exploitation of black newcomers was especially virulent in white working-class neighborhoods lying in the path of the expanding ghettos. Real estate speculators developed and perfected the techniques of blockbusting, panic sales and inflating of property values. Preying on the housing needs of Negroes and the fears of white homeowners, speculators first convince the whites that Negro entry into their neighborhood means a drastic drop in property values. They then offer to buy the housing for less than its appraised value but for hard cash, suggesting that it is now or never for the white homeowners. The housing is then sold to Negroes at more than the appraised value. (In the early stages of

blockbusting, a number of middle-income Negro families can usually meet these inflated costs.)

As blockbusting builds up momentum, families less able to meet the taxes, inflated debt structure, and other costs of homeownership enter the market. By this time the speculators can no longer find conventional mortgage money and they develop more costly sources of financing. The combination of less-able purchasers and higher financing costs insures 1) that housing will be broken up into smaller units, to develop income, and 2) that there will be a high rate of mortgage default.

In some instances blockbusting has produced fairly stable black neighborhoods. In most cases, it proves socially disastrous. The panic of whites and their resentment at being forced out of their neighborhoods creates an immediately hostile environment for the Negro newcomers. The newcomers, drawn from diverse neighborhoods, do not form a socially cohesive group.

In apartment districts, owners have frequently held onto their properties and joined the search for speculative profits. The ethnic changeover becomes a cue for lowering maintenance standards, raising rents and splitting apartments into more units.

This entire process of ethnic change, as viewed from a housing market perspective, can be seen as a withdrawal of capital investment from affected neighborhoods—economists call it “disinvestment.” When an owner of a house fails to replace worn mechanical or structural elements or to modernize periodically, he is “using up” his investment; he is spending elsewhere the money normally set aside for maintenance and replacement and is thus disinvesting in his house. Disinvestment also occurs when a mortgage institution fails to refinance a building for purposes of modernization or legitimate sale, or lends money only for very short periods of time.

When the speculation process has raised a mortgage to the point where the owner can barely meet the debt payments, there is little chance that a legitimate buyer can be found or that any financial institution

will lend more money for necessary repairs or renovations. When such inflation of mortgages has happened to many properties in a neighborhood, the scene is set for disinvestment.

When the financial institutions get caught up in the unwarranted inflation of mortgages, they often take large losses from defaulting owners. Our studies indicate that in many center city neighborhoods, banks have thus been driven into deep distress. And so—once burned, twice shy—many banks now refuse to commit funds to any neighborhood even remotely threatened by racial change. Recently, with attractive alternate suburban investment opportunities and a tight money market, the flow of reinvestment capital into older areas has almost halted.

Disinvestment, whether caused by owners who pocket maintenance and improvement money or by financial institutions who “red line” a neighborhood, is a critical step along the abandonment road. If at this juncture, inflated values can be deflated and reinvestment capital found, abandonment probably need not follow. However, in those neighborhoods where abandonment has occurred, capital flight has always preceded actual abandonment. The clearest clue that disinvestment has been taking place for some time is when the level of tax arrears in a neighborhood begins to climb sharply. The owner often decides to withhold taxes at the point where his building, through neglect, cannot hold rent-paying tenants and where the costs of maintaining essential services and removing code violations begin to approach rental income. Non-payment of taxes represents the owner's final profit taking.

The sequence leading to abandonment does not respect neighborhood boundaries or good housing within older neighborhoods. In East New York, Lawndale, eastern Cleveland and other neighborhoods in the surveyed cities, the process quickly spreads from older dilapidated sections to areas where the housing would be considered worth modernizing in a more stable neighborhood. Final aban-

donment is the end of a process that has less to do with the quality of housing than with who lives in it, who owns it and the willingness of investment capital to remain engaged.

Our survey turned up only fragmentary data on city-wide levels of abandonment. New York City data indicate a probable level of about 2 per cent of the housing stock. Abandonment in St. Louis has affected 16 per cent of the surveyed neighborhoods; estimates in the two surveyed Chicago neighborhoods run as high as 20 per cent.

However, these figures are only the tip of the iceberg. Disinvestment affects much larger portions of inner city housing than suggested by present levels of final abandonment. Disinvestment is occurring in at least 7 per cent of New York City's housing stock and will probably lead to final abandonment, without drastic intervention. Similar levels hold true elsewhere.

While these percentages may not seem severe, we find them dangerously high. There is reason to believe that a "tipping point" phenomenon is operative in abandonment—a tipping point somewhat correlated to the tipping points in racial change of neighborhoods and schools. Our evidence suggests that abandonment becomes visible when 3-6 per cent of a neighborhood's structures are finally abandoned. At this tipping point, the investment psychology probably becomes so severely depressed as to preclude any reversal of the abandonment process without unusual intervention.

Cities have yet to develop a consistent and coherent approach to the problems of housing deterioration and abandonment. Municipal policies are usually a mixture of *ad hoc* programs structured in response to particular situations and to available (federally-funded) programs.

Local tax policies are out of line with most definitions of the central city housing problems. Cities continue to raise taxes to support municipal services in neighborhoods where the income of tenants is too low to pay the rents needed to support the tax burden.

Code enforcement policies are based upon erroneous theories of slumlordism. While poor maintenance is in good part due to landlord neglect, by the time code violations become really serious, the neglectful landlord has typically sold his building to someone without the resources for extensive repairs.

Our survey indicates that public policies such as urban renewal displacements, high taxes and overzealous code enforcement in disinvestment neighborhoods accelerate and exacerbate abandonment—but they do not cause it. Nor are the policies and programs available to municipal governments sufficient in scale or scope to stem abandonment.

Abandonment has reached the stage where it poses a clear threat to the survival of central cities for human habitation. The central portions of our major cities cannot be allowed to continue toward social and physical destruction without endangering political and economic institutions at all levels.

Solutions to abandonment must recognize the many-sided nature of the problem—social, political and economic. Racism has a great deal to do with the abandonment of neighborhoods—but racism by itself does not cause the kind of process described here. Racism combined with an exploitative response of the real estate market, inadequate public programs or controls, a highly restricted black sub-market (including suburban exclusionary policies), and a rapid withdrawal of investment capital from older neighborhoods is a fuller description of the cause of abandonment. Programs that deal with only a portion of the cause are bound to fail. An end to racism will not restore capital viability; an end to disinvestment on the part of financial institutions will not prevent exploitation by landlords.

A realistic approach to housing abandonment must touch all key elements of the problem. It must restore confidence in the strength of the central city investment market; it must remove the possibilities of exploitation; it must deal with racial discrimination, and with contradictory and complicating public policies both within municipalities and within metropolitan regions.

The failure of federal, state and local governments to act to avoid abandonment will lead to widespread abandonment, increased dislocation and overcrowding, enormous losses of private capital investment, and the need for a massive infusion of public capital investment.

Preventive actions, while requiring very large public outlays and substantial changes in policy, will avoid the necessity for far greater outlays and policy changes in the future.

The most important element of an effective strategy to reverse the abandonment trend is strong public intervention in the private money market in order to insure that adequate mortgage and housing improvement loan funds are available in the central city.

It will also be necessary to reexamine all tax, planning, code enforcement and development policies to insure that they are directed towards increasing the flow of investment capital into neighborhoods threatened with abandonment.

On the basis of these conclusions, we recommend the following policies as a guide to the action necessary to effect any basic change in current trends:

Strong immediate measures must be taken to suspend further disinvestment in those communities where the abandonment process is in an advanced stage. Such actions could include a temporary moratorium on mortgage foreclosures.

There must be vigorous public intervention in the central city mortgage and improvement loan market in order to insure that adequate investment funds are available at an interest rate encouraging proper maintenance, needed rehabilitation and new construction. Such intervention could take the form of direct public loans or government-insured private loans at a subsidized interest rate. Further actions might include requiring all financial institutions doing business in central cities, and pension and welfare funds, to invest in central city housing (or providing tax or other benefits to encourage such investment). Another action which should be carefully assessed is a local or state government guarantee of

the resale value of housing in designated areas (contingent upon proper maintenance by the owner), with the government either paying the difference between the guaranteed value and the price offered, or acting as "owner of last resort" and purchasing all housing which cannot be sold at the guaranteed price.

Federal, state and local governments should support and subsidize efforts to test the feasibility of new forms of ownership of central city housing, including cooperatives, condominiums, ownership by community organizations, and ownership by public agencies. There should also be efforts to test new methods of improving the quality and efficiency of management and maintenance services in central city housing.

Property taxes in the central city should be reduced and restructured in order to decrease the burden on these properties and increase their investment attractiveness. Tax abatement and exemption should be extended to owners who improve their properties without passing on the full cost to their tenants.

In order to encourage such tax reform, federal and state governments should provide grants to cities in lieu of taxes forgiven for these purposes.

All levels of government should adopt policies and programs to create those conditions which help stem abandonment—economic integration, social stability and a high ratio of home ownership.

These recommendations by themselves do not constitute a program of action but suggest the kinds and levels of policies that will be required. The costs will clearly be immense—and the central cities simply cannot meet them without federal and state assistance. But the cost of inaction is truly terrible and may eventually force many municipalities into some form of bankruptcy or state receivership.

Programs must be developed at metropolitan, state and national levels that will provide a total and coordinated attack on these problems. Anything less than a massive commitment may slow the abandonment process but will not change the ultimate prospect of ghost towns at the very heart of our metropolitan regions.

SCULPTURE IN SPACE

A small school building in the New Jersey countryside is a work of art and architecture

In the rolling hills of New Jersey, at Gladstone, is the quiet campus of St. Bernard's School (not affiliated with the well-known school of the same name in New York City). It is a small school, for fewer than 200 boys (and now a few girls), and its new Education Building, by Victor A. Lundy, is also small, containing only a library, ten classrooms for the humanities and sciences, and a lecture hall. But the building has a quality of excellence far beyond its size.

To understand what the building is, first see what it is not. It is not of its landscape—it is clearly “a piece of sculpture in space,” as Lundy calls it—although the architecture nevertheless takes certain cues from the rolling country. Lundy says his intent was to “allow the land to sweep gently through the building and on past it down the hill.” He speaks of the exterior court “that captures some of this countryside, in an intimate way, ‘within’ the building.”

And the building is not of its campus in the sense of duplicating the nondescript brick or wood frame structures that make up a casual (but right-angled) plan. From a distance, however, the campus is like a small village, and the new building is “of a piece” with the whole. In terms of scale, the court and the building around it are compatible with the existing buildings. In sculptural terms, the Education Building was conceived as terminating the campus at its southwest corner by making a tower of one element, the library.

Lundy decided early to break the program into parts; a single large mass would have been out of scale with the rest of the campus. Thus, classrooms are in two wings (one L-shaped, one straight), and with the library, they enclose a carefully scaled central court. He took advantage of the slope of the land to tuck the lecture hall underneath the library. The parts are connected through an underground route; the classroom cor-

ridors lead downstairs to the large lecture hall, and a small curving staircase leads directly up into the library.

The central court is a constant frame of reference (opposite top). “The ambulatories [classroom corridors] are windows to this court,” says Lundy, “and the north wall of the library faces it, and is a window to the whole campus.” Throughout the building, Lundy has been concerned with light—“how and where it is let in and extruded out.” Those portions of the building not facing the courtyard (opposite bottom) are especially interesting in this respect; classrooms and the library have windows faceted into their exterior walls in such a way as to give students view, ventilation and light without the distractions of the outside world.

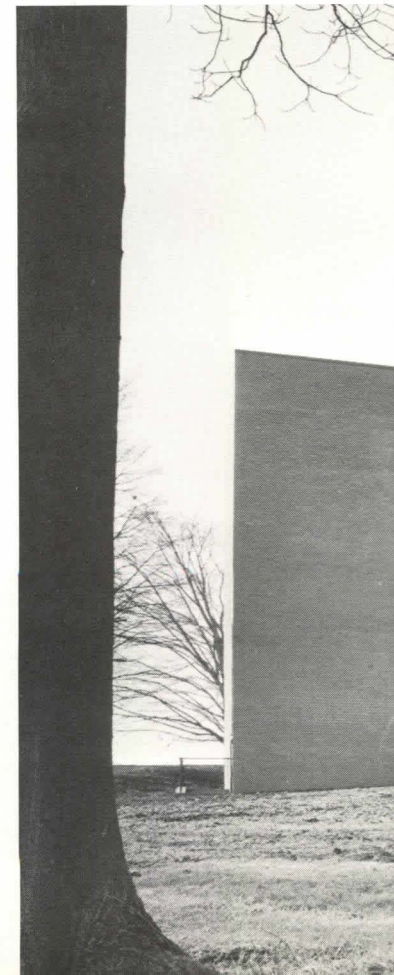
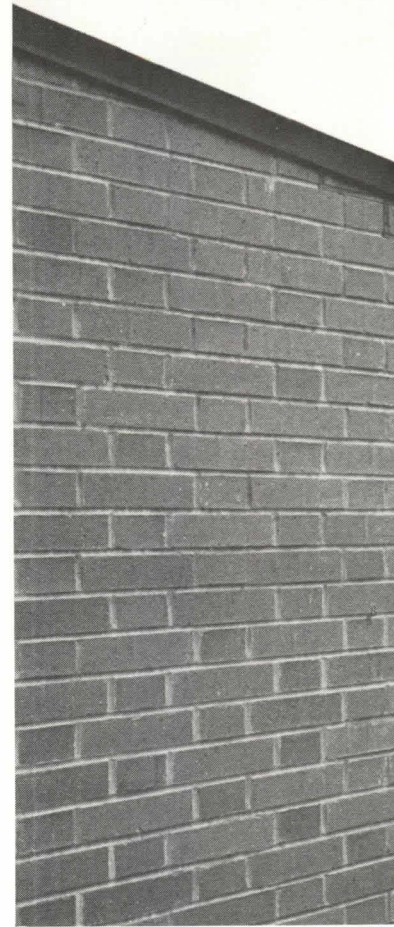
The courtyard can be used for outdoor classes, Lundy says. “Sometimes the countryside can take over—this is a private place.” It is entered from the uphill corner, with the library in prominent view as one approaches. Only when one is fully inside do two other entry points become visible. “The buildings are broken apart with space,” says Lundy.

“With nature all around, it is a place to enter into, be contained, quieted, a place that allows peace and contemplation.” For Lundy, the building was an attempt to make “a serene, timeless, noble place.”

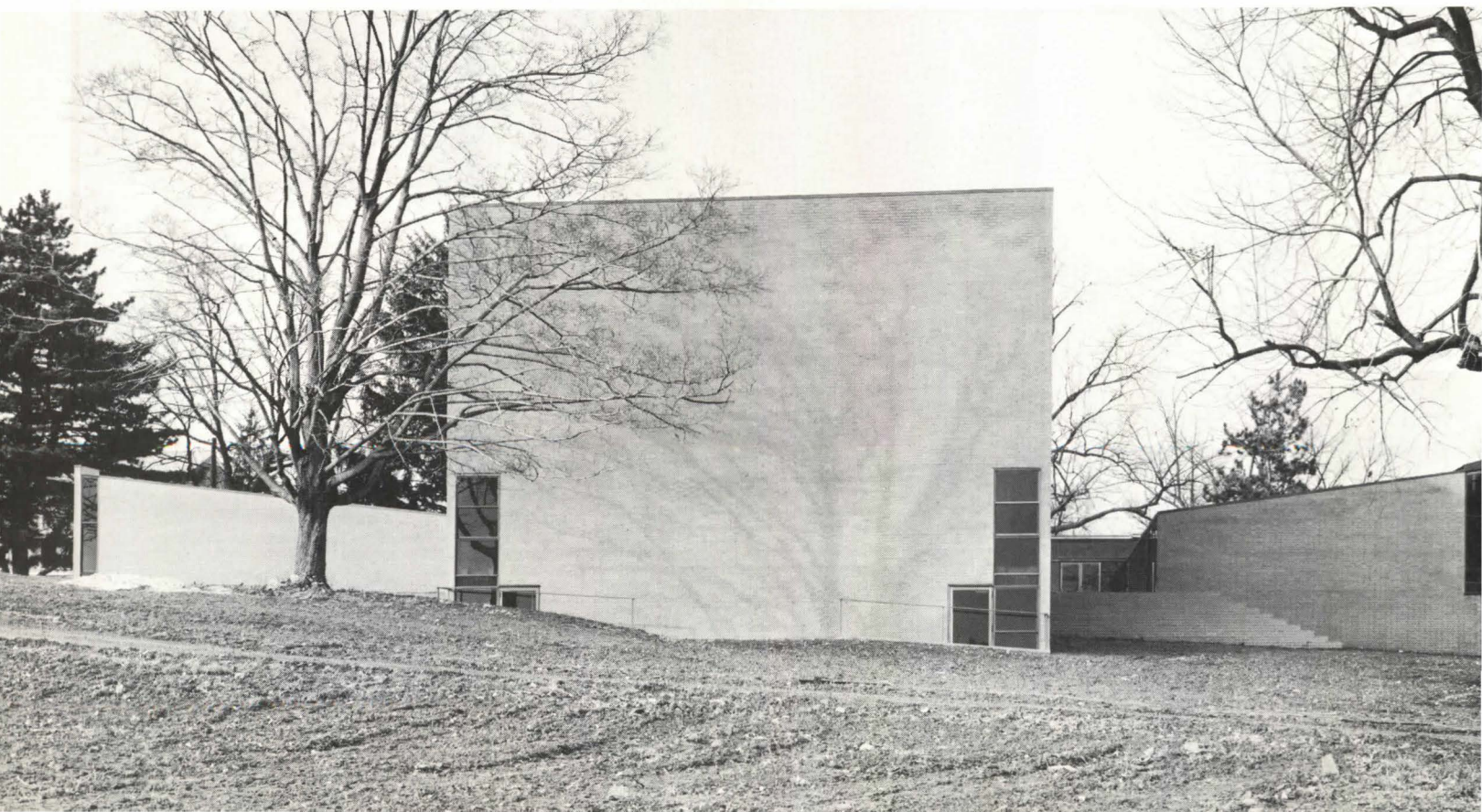
Materials and colors are quiet. The masonry bearing walls are of French gray velour brick, the color resembling bark. Wood decking, finished natural, spans the classrooms, and spans the segments of the dramatic library truss (see pp. 50-51). The ceiling of the spaces under the library is of coffered concrete. Carpeting throughout is also neutral; glass throughout is bronze-tinted, giving back sharp reflections on every plane.

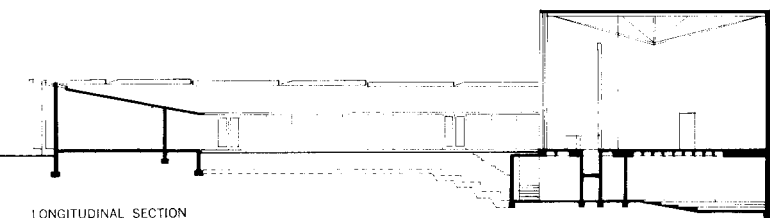
Lundy, the painter and sculptor, has never been far from Lundy, the architect, on this building.

—ELLEN PERRY BERKELEY

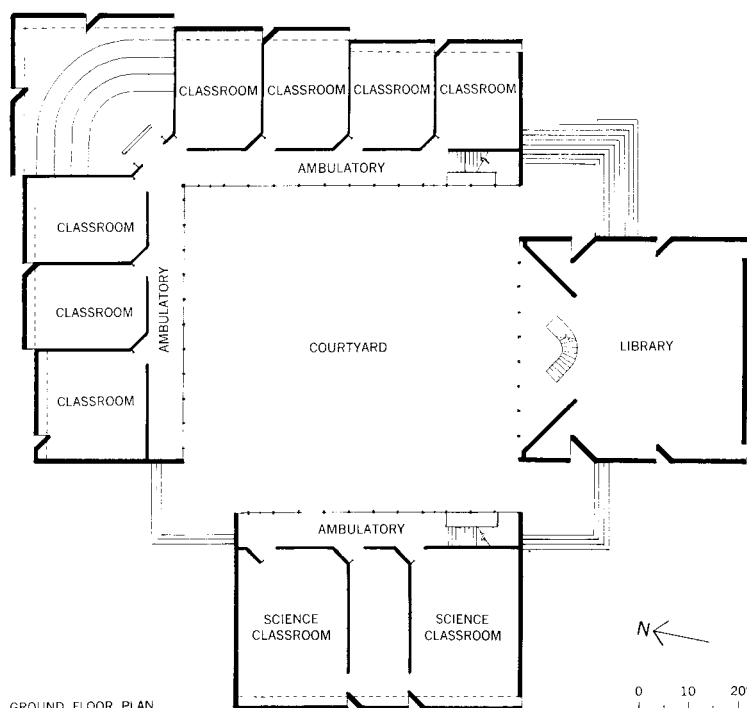




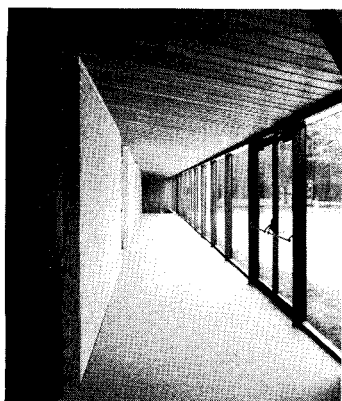
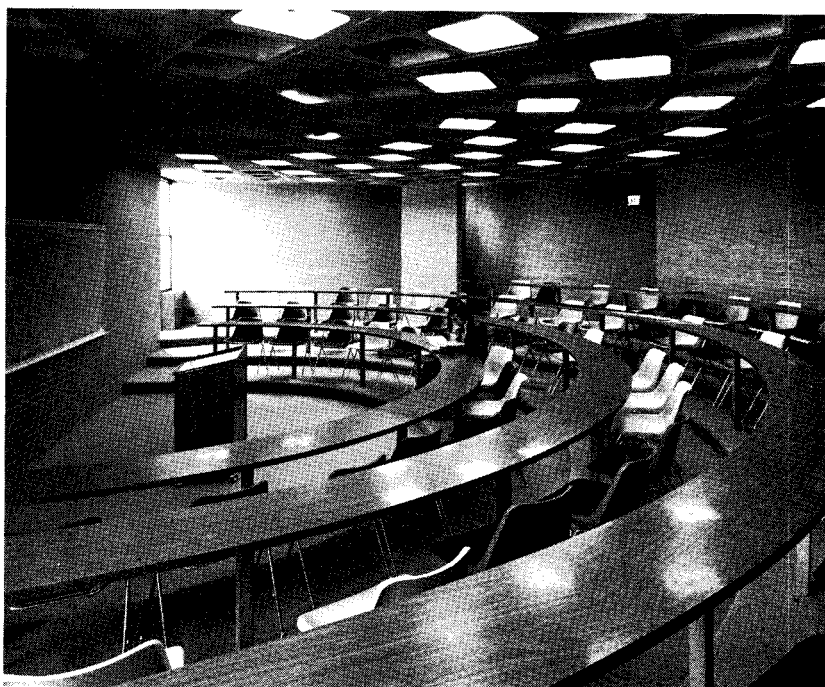




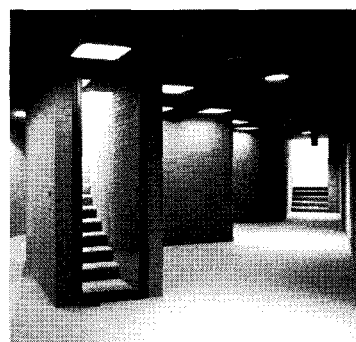
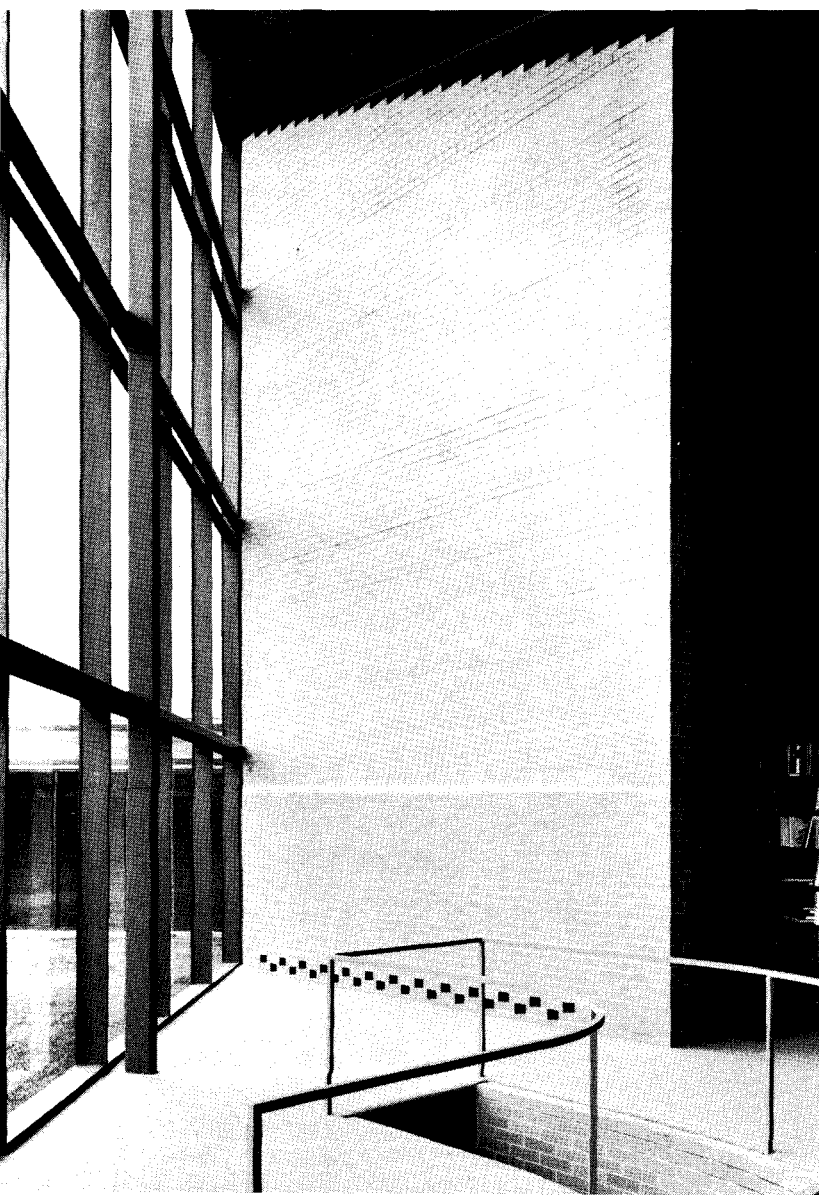
LONGITUDINAL SECTION



GROUND FLOOR PLAN



The courtyard is a quiet place, a single maple at its center. Reflected in the bronze-tinted windows (top, opposite) are school buildings to be ultimately torn down. Opposite bottom: the view from the south conceals the courtyard that is bounded by the library and its flanking classroom wings. As seen on the plan, the courtyard has corridors along three sides. They are fully glazed (left) and refreshing to the eye, while the classrooms (above, top) are quiet and closed to distraction. All four walls of a classroom can be used for education; a continuous skylight runs along the high point of the ceiling, and narrow view windows are faceted into the exterior wall. Above: the lecture room under the library.



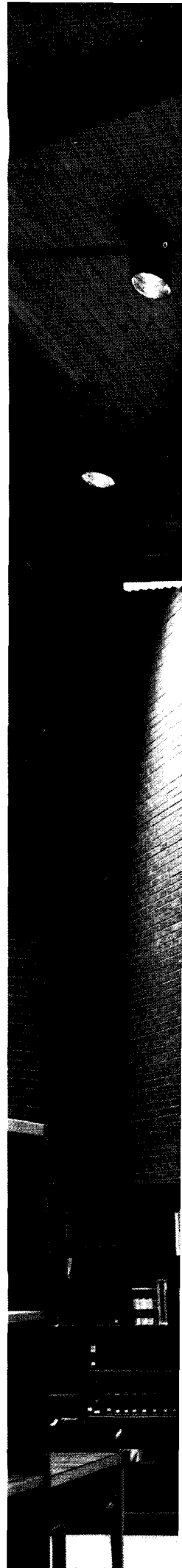
The grand space is the library, entered either from the courtyard or from the lower floor. An enclosed stair (above) leads up to the soaring space (top, left). The diagonal brick walls extending inward from the front corners stabilize the masonry box and "curtain" the window wall (bottom, left). The roof truss is a radial lace-work of steel over the 45-ft. square. Top members are in compression; bottom members ($1\frac{1}{8}$ " square) are in tension. The truss was hoisted into place whole.

FACTS AND FIGURES

Education Building for St. Bernard's School, Gladstone, N. J. Architect: Victor A. Lundy. Engineers: Severud-Perrone - Sturm - Conlin - Bandel (structural); Horace M. Patrick (mechanical). General contractor: Thomas E. Cross, Inc. Building area: 12,000 sq. ft. Cost: \$475,000.

(For a listing of key products used in this building, see p. 69.)

PHOTOGRAPHS: George Cserna





Some young architects take a fresh look at pre-engineered metal building systems

Architecture, with a capital A, conjures up images that exclude many building types. Among those excluded are pre-engineered metal structures, most often used for shopping centers, industrial and warehouse facilities, and such special functions as car wash stations. These buildings tend to be labeled either ugly or temporary, structures of last resort to be erected only when limited time or money make a "real" building impractical.

Architects and clients are not the only ones to think pre-engineered buildings are inferior architecture. Perhaps more significantly, so do many manufacturers. Many have given up on the architectural market completely; others circumvent it by advertising to builders and developers that beautiful buildings can be theirs by merely tacking on pseudo mansards, colonnades or other "popular" facades to the metal shells (who needs architects?).

So concludes a report by Architects Hardy Holzman Pfeiffer Associates that may shatter the old myths and redefine some architectural goals in the process. Sponsored by the Ford Foundation, the report develops criteria for a flexible, low-cost, easily erected Community Resources Center (CRC) for the Model Cities area of East New York, Brooklyn. As envisioned in the report, the CRC will be constructed almost entirely of off-the-shelf manufactured structural systems and components. Another HHP project, the Community Services Center for North Carolina's Shaw University, led to the Ford commission. The Shaw project, already partly occupied, is basically an Armco Steel prefabricated building.

"People have been educated to think metal buildings are ugly. But why are they intrinsically more ugly than wood, brick or concrete?" says Malcolm Holzman. "Le Corbusier as early as 1923 saw the purity of form in planes and autos."

What the report says

A basic premise of the report and the projects is that architects have become remote from the architectural needs of contemporary, changing society; that they have too long sold themselves as the arbiters of upper class esthetics only. The report criticizes conventional

architecture as too costly, too slow to erect and physically inflexible.

The report analyzes the types of systems now available from manufacturers and contains a library of data on 50 representative types that the architects hope others will use and expand.

Briefly, pre-engineered systems and components are described in the report as designed and manufactured in a factory, on or off the building site and comprising repetitive standard components to achieve the economies of mass production. The buildings may be erected quickly and are available from manufacturers and their dealers.

Such structures are usually thought of as background structures, except by those aggressive manufacturers who sell "style" to spruce up their roadside appearance. Most are made of steel, though some use aluminum, fiberglass and plastics. Almost all are rectangular in shape and designed for large, open sites.

Expansion is usually horizontal; units may be tacked onto each other. Few have provision for a second floor; most enclose a single, large volume of space. Within the industry, there is little coordination between manufacturers in designing connections, methods of erection or assembly; combining products is often difficult.

There are three structural categories, according to the report: large and medium span structures; small span systems; and highrise. The large and medium span structures usually have a governing dimension, or width, of 50 to 300 ft. and a length up to 1,000 ft. Interior spaces may have columns or not. Small span systems, the largest category, have span limits of 8 to 50 ft. Highrise systems are used primarily for housing, up to 30 stories high.

In addition to primary structural systems, there is a wide variety of component products, from prefabricated bathroom and kitchen units to ceiling light panels, skylights, etc. In the past, builders have used one construction system and appropriate component infill systems.

The systems are erected quickly: 5,000 sq. ft. may be enclosed and ready for use in as little as 60 days. And the buildings cost less than their conventional counterparts, although the

degree depends on program and planning requirements.

Working with the systems

The structural technology of these structures is today best understood by their manufacturers. HHP has not tried to redo their work, but make it the starting point for their own, first on Shaw, then on the CRC.

Because much of the work of designing with pre-engineered systems is coordinating them, the architects found a great deal of their time going into management activities and proportionately less into drawings and structural detailing.

Drawings for the Shaw project were done by the local dealer for Armco, which provided the structural shell. The architects supplied the dealer with sketches, diagrams, layouts and space divisions, and material specifications. The two completed buildings took only 185 days from initial design to occupancy.

Using the space innovatively is perhaps the biggest architectural challenge. Traditionally, the manufacturers have made their buildings either for huge volumes of space or to be partitioned off into a series of small box enclosures with 8-ft. hung ceilings. Neither of these alternatives was suitable for the Shaw or CRC program.

After analyzing program requirements, which for participatory community centers are always changing, the architects devised a planning concept that uses the interrelationship of activities as its basis. Instead of putting moveable walls and ceiling into conventional box-like spaces, the architects analyzed which activities could occur in open spaces, which in semi-enclosed spaces and which require closed spaces (such as toilet and equipment areas). Both visual and acoustical separation were considered.

These patterns of separation form the basis for what the architects call residual space planning. The enclosed, fixed spaces are placed so that they create diverse shapes around them (residual space) and this leftover open space may be programmed for many functions.

Just how well the planning concepts of Hardy Holzman Pfeiffer work with pre-engineered structures is best illustrated by the structures.

SHAW UNIVERSITY

The first industrialized building project of Hardy Holzman Pfeiffer was the Shaw University Community Services Center, of which the first two units (J. D. Joslin, Inc. was contractor) are already occupied, with the remaining two scheduled for construction later this year. Primarily Armco steel structures, the Shaw center exhibits unique and flexible planning.

Shaw, a black university, has a campus of mixed, undistinguished architecture. Its progressive administrator at first rejected an industrialized metal building but the \$16-per-sq.-ft. CSC design won him over, allowing the architects to order primary structural elements before final design.

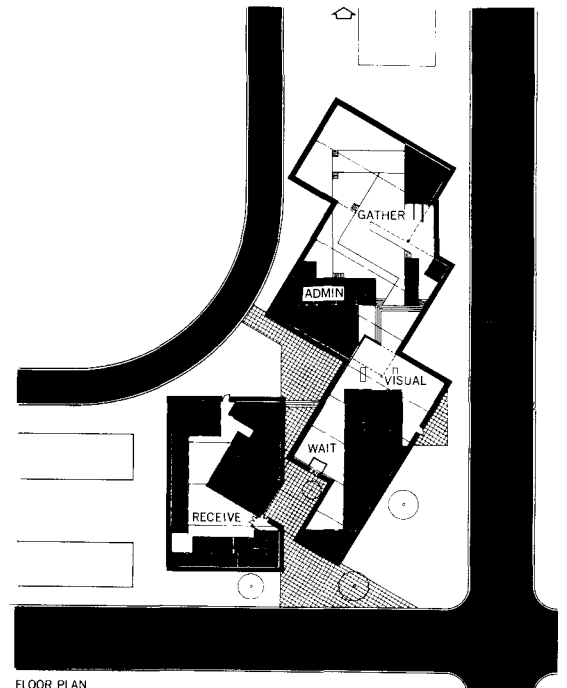
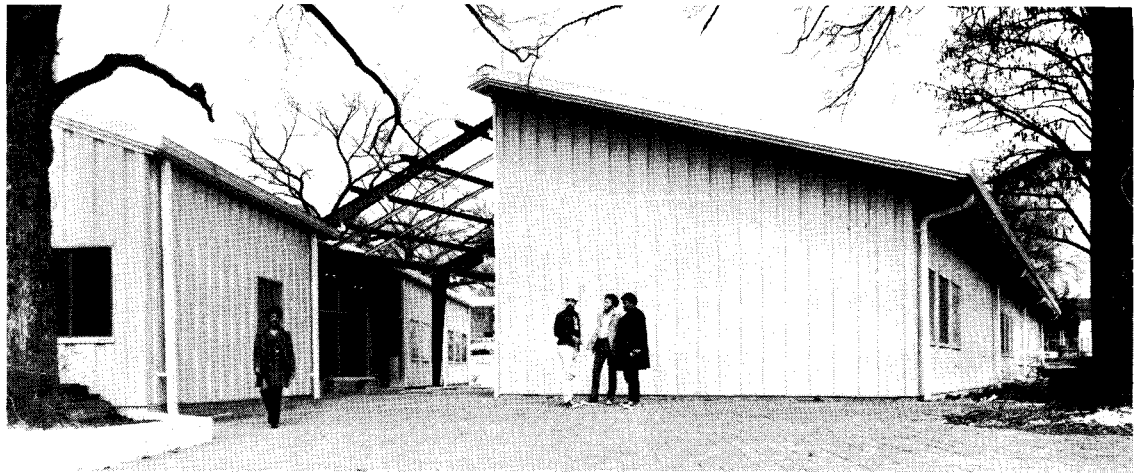
The buildings will contain 20,000 sq. ft. of space when all four are completed. The center has been dubbed the Incubator by Shaw because it will house many experimental black university programs, as well as diverse activities in art, music, theater and administration.

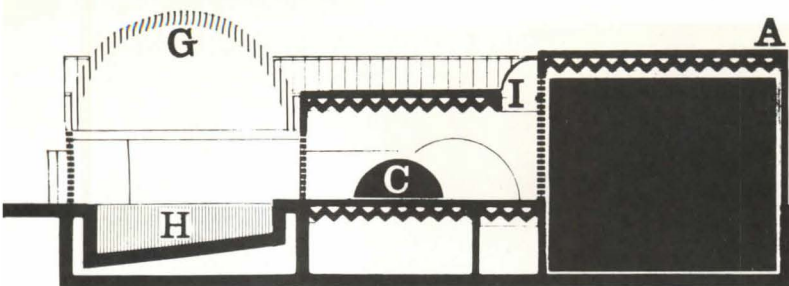
The configuration (see plan) is determined by interior space demands. There is a path between two completed structures that allows the campus to flow through the complex; truss extensions cover the patio area for a trellis effect. The buildings interpenetrate each other to avoid a rigid cigar-box shape.

The interior consists of large, flexible spaces for seminars, workshops and community gatherings, and smaller spaces, designed for individual activities, such as study cubicles and music practice rooms. The two-unit building to be constructed next will contain rudimentary theatrical facilities; the stage will be defined by steps in the floor, keeping the area flexible.

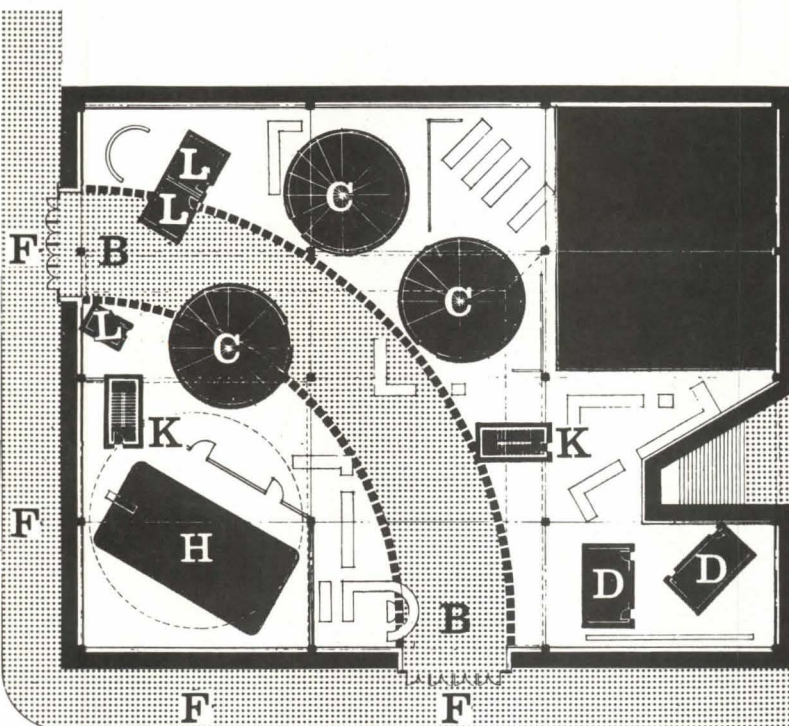
Conventional materials and partitions define the interior spaces. In the small spaces, ceilings are low and hung (often parallel to the sloped roof, rather than the floor) for an intimate atmosphere. The architects opened up the ceiling spaces in the large areas, leaving ducts, etc., exposed.

The architects practiced residual space planning, so fixed elements, such as enclosed office and toilet areas, define surrounding, semi-enclosed spaces. The building can expand on a two-way grid.

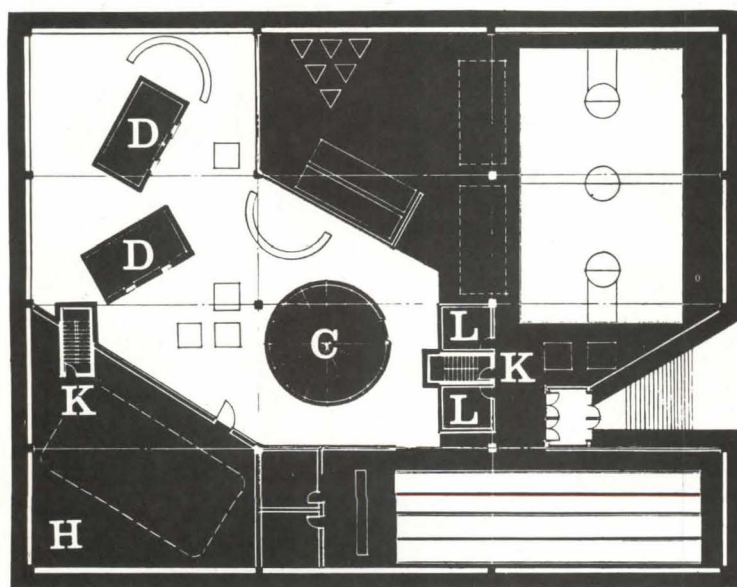




SECTION



UPPER LEVEL



LOWER LEVEL

COMMUNITY RESOURCES CENTER

The most recent and radical pre-engineered building proposal is for the Community Resources Center, in East New York. It now has Model Cities approval at all levels and will start construction when the earmarked funds clear city red tape.

The project met with strong community opposition when it was first presented. A Model Cities representative formalized community objections by writing that they would not accept pre-engineered buildings because they were ugly. Says Norman Pfeiffer: "We were selling the notion that conventional architecture is slow, costly and inflexible. But the community's only objection to opulent buildings was that they were not in their neighborhood."

The community was eventually won over and now supports what they consider a unique building. And unique it is: a combination of 12 independent systems, producing a multi-level structure that will stand strong on a site surrounded by decay and deterioration. There it will serve a target community of 103,000 persons, 80 per cent of them Negro and Puerto Rican.

The center will provide the community with services it has never enjoyed before. Facilities will include a semi-enclosed workshop and exhibition area; semi-enclosed meeting areas; enclosed special education classrooms; and a branch of the Brooklyn Public Library. A large open/enclosed space is provided for large gatherings, basketball games and dances.

Other facilities will include enclosed bowling lanes, a swimming pool, a small administration area, and coffee shop and bookstore that will have access from the street and building.

The combination of structural and component systems in the building are its most unusual aspect. Whether or not the building is the most perfect building the architects could have designed is almost a moot point. Under the terms of the Ford Grant, for better or worse, the problem was to stay within the limits of prefabricated components already available.

The size of the building and code restrictions determined selection of a small-span structural system: modular framing, by Butler. The height of the

structural bays is varied for a stepped interior volume with 60,000 sq ft. of usable floor area.

The building is divided by an extension of the street, which provides a pedestrian shortcut to neighborhood activities. This passage is covered by a Wonder Trussless Vault. Seal Reinforced Fiberglass Domes (designed as weatherproof church domes) will provide private, yet movable, classroom space, along with standard trailer units. These units are placed so that residual, or leftover, space provides semi-enclosed areas.

The swimming pool will be covered by an inflatable structure (made by Bird Air Inc.) that may be removed in the summer. The walls will be insulated corrugated panels, manufactured by Butler. Airplane hangar doors complete the exterior envelope and permit entire walls to be opened in daylight, yet secured at night.

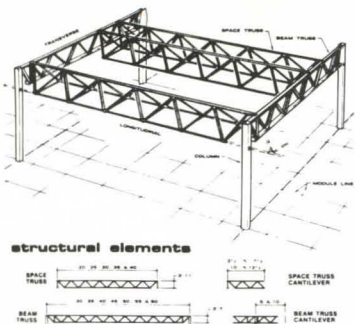
The toilets proposed in the report are Crane residential units. The architects admit this detail may change because the residential units are not designed to withstand hard public use and would probably have to be replaced before long. Commercial models were unavailable.

The stairs are prefabricated units that may be disassembled and moved. Mechanical equipment is pre-packaged, with ductwork and conduits exposed.

The center is expected to cost about \$1 million, though final cost analysis must await final details and construction timetables. The architects are optimistic that the center will reveal cost savings over a conventional building. Yet, because it is a prototype, and because it uses a multiple systems approach, for which the industry is not yet geared, it will cost more than a single-system structure.

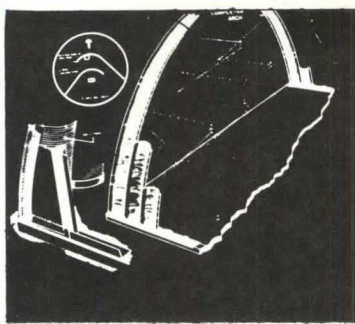
Ultimately, the architects hope the manufacturers will organize for the architectural market; that products will be designed to work with other manufacturer's products; and that the multiple systems approach can be used on a larger scale. "Imagine a structure so large that a Butler bent could be used with a Bucky Fuller dome, next to an inflatable . . ." muses Hugh Hardy, already on a mental walking tour of his creation.

—MARGUERITE VILLECCO



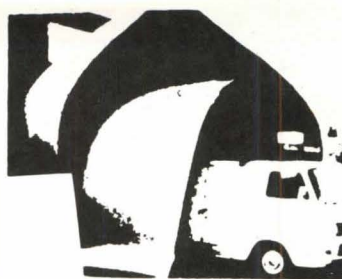
STRUCTURAL SYSTEM - BUTLER MANUFACTURING CO.

60' beam trusses, 35' space trusses, and 8" steel columns comprise a new building system based on components of integrated design. This system minimizes cost in future space changes or expansion. Simple bolted connections permit easy modification of structural framing and related components.



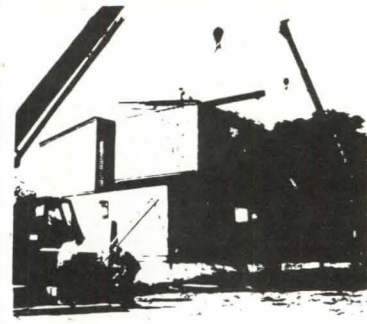
MODULAR ARCH - WONDER BUILDING

Based upon a 30' wide steel self-supporting clear span panel, this system is comprised of double curved and corrugated panels which have a high strength-to-weight ratio.



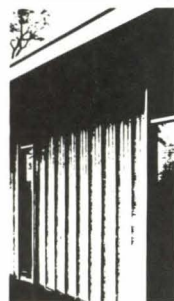
FIBERGLASS DOME - SEAL REINFORCED INC.

A one piece 30' diameter dome, this component is lightweight, easily movable, and dimensionally stable with high tensile strength characteristics.



TRAILERS - ARBOR MODULES

A modular building unit, this component is factory constructed and delivered complete, including all appropriate mechanical equipment and interior finishes.

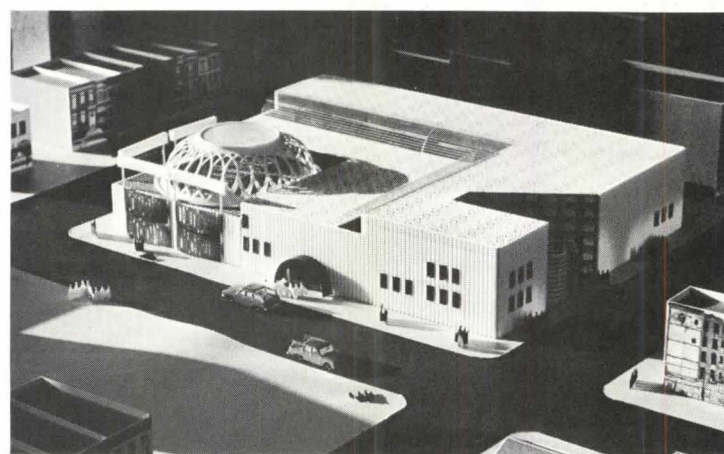


F-103

Factory insulated F-103 wall and roof panels achieve outstanding thermal efficiency at moderate price. The modular face is Butted, the inner face a flat steel surface. Both faces have factory applied color finishes. The insulation between faces is one inch of foamed-in-place urethane with a U factor of .10. Panels give 3 foot width coverage and factory dimensioned lengths up to 30 feet. Wall panels span 14 feet without supporting structure and easily accommodate doors and windows.

WALL SYSTEM - F 103 BUTLER RIB

(See above.)
Used in conjunction with standard factory installed aluminum sash.



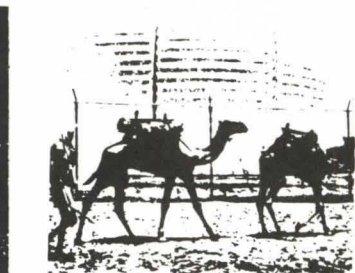
HANGAR DOOR - RAYNOR MANUF. CO.

24' wide by 18' high fiberglass hangar doors are surfaced with Dupont Tedlar PVF film guaranteed for 15 years. These doors are translucent (if made from fiberglass) which permits natural light to be diffused throughout interior spaces.



AIR SUPPORTED STRUCTURE - BIRD AIR INC.

A double walled air entrained structure, this system is capable of a 60'-0" to 70'-0" clear span. Constructed of two layers of fireproof vinyl-coated nylon fabric, it is resistant to abrasion and other damaging effects caused by the elements. It can withstand high winds and snow loading and can be readily installed and disassembled.



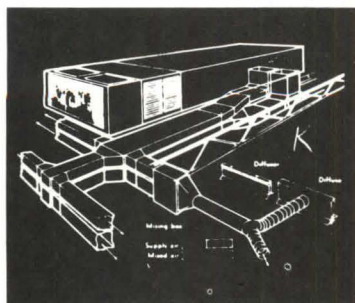
SWIMMING POOL - FOUNTAIN POOLS CORP.

A 25' by 50' steel pool with Equa-410 filtered water return system and a continuous overflow keeps pool surface clean. Low voltage recessed underwater lights and all filtration equipment are included.



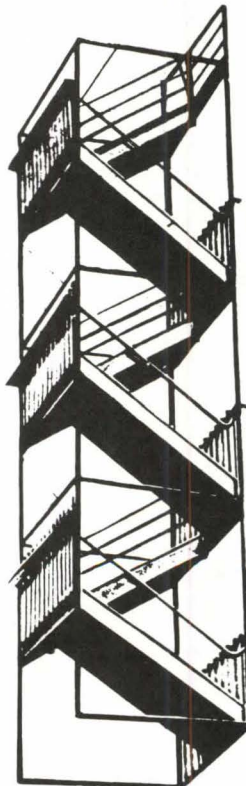
SKYLIGHTS - ICKES-BRAUN GLASSHOUSES, INC.

A continuous band of light-weight glazed units is made from standard structural components and clip angles. Aluminum members withstand weathering and condensation without painting or other maintenance.



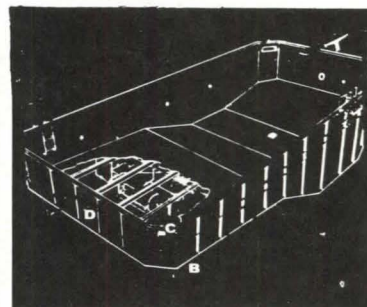
HEATING, VENTILATING AND AIR CONDITIONING UNIT - LENOX INDUSTRIES

A direct multizone system is contained in one unit including up to 12 individual motor-controlled zone dampers, and a simple low voltage thermostat which regulates both heating and cooling.



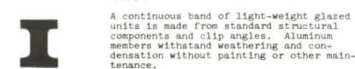
STAIRS - PICO SAFE STAIR CO.

Pre-engineered stairs are shop fabricated and erected up to 8 landings high and transported to the site for placement. Code requirements permitting, these stairs can be open to surrounding spaces and provide access by half levels to various activities.



UNIT TOILET - CRANE COMPANY

A one piece bathroom unit including all fixtures is installed in a 5'-8" package. Construction is gel-coated fiberglass with reinforced polyester floors, walls, and ceilings.



With heroic initiative after the Six-Day War, Teddy Kollek, Mayor of Jerusalem, formed the Jerusalem Committee to add an international voice to the development of the city. In December 1970, he invited some 30 foreign members of the committee, architects and town planners,* to gather in Jerusalem and evaluate the city's plans for physical development. The participants were not obliged to agree with the Government's position, Kollek maintained, nor was the political perspective to intrude upon their strictly professional concerns. (As we now see, though, the political considerations were of far more importance than the pragmatic esthetic concerns.)

During the week before the conference, criticism of Jerusalem's development plans was already being voiced, in Tel Aviv, at the World Congress of Engineers and Architects. Philip Johnson, for example, urged that those responsible not engage in patchwork but plan on a grand scale.

"Let's make big plans. You have to dream big. Once when our country was young and energetic like Israel, we had crackpots who dreamed. We used to be giants in our own land. Now maybe it's your turn. This is the Israeli century. You can't compare yourselves with anybody else. Action is imperative in Jerusalem before American sprawl starts dribbling the city out into the hills. It's your last chance."

In Jerusalem a week later, the international group offered advice that no one had anticipated. The advice was also extremely varied, but the international composition of the group was such that it could hardly have produced a consensus.

Jerusalem, Holy City to Israelis and Arabs, to Jews, Moslems and Christians, is a low, sprawling city perched within the hills of Judea on an irregular plateau. The city is completely surrounded by hills, arid but not inhospitable. Idiosyncratically the edge of the city does not dwindle into suburbs; the residential areas stop and the rocky wilderness of Judea

begins. Jerusalem is a sacred space for a global constituency and as such has an extraordinary mystique. Not medieval, not Renaissance, not having any precise architectural crystallization, Jerusalem attains the timeless and is both venerable and functional, a reliquary and a capital, unprotected from the contagion of the secular, yet remaining the palpable and pulsating spiritual heart.

Although Israel controlled most of Jerusalem between 1948 and 1967, the Six-Day War destroyed the pre-existing partition and reunified the city. Unification wrought a substantive change. The city now serves as the Capital of the State, as before, and as a center for the surrounding countryside. Following the victory, the Municipal Government began a planning program to provide rational growth, desperately needed housing, transportation solutions, commercial redevelopment — to provide, in fact, a Master Plan.

The planners realized the necessity of healing the psychosocial fracture of the city while preparing for its anticipated growth. But how to maintain the identity of Jerusalem and yet convert it into a modern, viable city? As Lewis Mumford wrote:

"The fact is that the unification of the city and region of Jerusalem can be achieved only by actively bringing into operation cultural and religious forces that do not come within the province of the Municipal authorities. These underlying factors are not only transnational but transtemporal as well, since they come out of the remote past and point to the distant future."

Mumford could not attend the conference, but sent a written critique:

"The municipal authorities have been faithfully carrying out their assigned duties in the spirit of Baron Haussmann, without realizing that it is to Isaiah they must look for guidance. What remains of the original vision unless each generation renews it, may be only a burial cave, a rock, at best an architectural shrine, which has been guarded through the centuries. . . . I am speaking of all cities, not just Jerusalem."

Three plans were presented to the international group: 1) the Master Plan of 1968, presented

PLANNING FOR JERUSALEM

BY RICHARD MEIER

An eye-witness account of the recent conference, in which an international group considered the future of a sacred and secular city

as an interim report; 2) a plan for the Central Business District; and 3) a plan for the Old City and its environs. Most comment and controversy centered on the first and most comprehensive of these plans.

The Master Plan shows solicitude for the direction of development, concerning itself with physical conditions relative to their effect on urban activity and dealing with the status of the city as capital and sacred city. At the same time it allocates areas of density for a population expected to grow from 270,000 to approximately 890,000 in the next 40 years. It proposes a transportation network (which according to the Master Plan is both concentric and linear), and land-use diagrams. There are however no three-dimensional qualities to the Plan—nothing of the layered simultaneities of actual city life or recognition of the magnificently varied topography and social interactions of the city.

The Plan is also concerned with the location of the city center. Quite unfortunately the Plan's transportation system neither unites and relates the four centers nor provides the dispersal necessary for efficient transportation. The use of roads in the Master Plan is directed exclusively to the organization of space, an over-determination by the transportation planners that destroys the city instead of building it.

The fact that the Plan is lacking in unity, that its qualities, values, principles and goals

are not clearly articulated, elicited strong reaction. Bruno Zevi saw the Plan as neither linear nor radial; no structure, no vision, no form, no clarity. He advocated a new, modern city, separate from the existing Old City. In effect, he said, the Plan was not open but closed.

It was obvious to all participants that the roads were the structural determinants of the plan. Almost the entire Master Plan, in fact, was seen as deriving from the problems of a present arbitrarily detached from its future.

The proceedings were as disconnected as they were intense. A participant spoke sometimes in response to a previous point, sometimes on a new subject. Criticism was diverse, passionate, and often conflicting. Buckminster Fuller spoke of synergy, the mystery of mass phenomena and Jerusalem as the center of all magnetic forces, since all humanity is somehow related to this site. He entered a caveat against investment by remote speculators, which could undercut the city's morale.

Louis Kahn called the Master Plan unintelligible because it failed to comprehend with explicit principles the three-dimensional mosaic of the city. Kahn said that Jerusalem deserves the aura of the unmeasurable. He also addressed himself to the necessity of a mystical sense of theme, a pith, a life-blood not derived from an advantageous present.

Committee members were making a fundamental criticism

Mr. Meier is an architect practicing in New York City. His most recent work to appear in the Forum is the artists' housing complex, Westbeth.



Lawrence Halprin

of the Master Plan, objecting not to its minor details but to its very basis, or in fact to its lack of basis. There is no central theme, nor any expression of a social or physical hierarchy of elements which perhaps could generate a theme. There is neither an order of meaning nor an order of forms.

Some participants advocated a plan organized around a coherent theme having for its ethos the sacred space of a religious center, or an education center (a World University), or as Mumford submitted, "a denationalized, de-politicized world capital with extra-territorial status," a national/international headquarters, or a place emphasizing the sculptural qualities of the landscape, with terracing and a closer ensemble of manufactured and natural object.

Pursuing the subject of the- matics, Lawrence Halprin complained of the Plan's vacuity of image, and advanced an ecological approach as an intrinsic perspective upon Jerusalem. Light, land and the hills are the harmonic principles of his suggestion, the foothills of the past and the light of the future. This is not to be confused with a merely physical Haussmannesque transformation but involves the concepts of continuum and organism.

"At the core of everything lies the fact that you are using the wrong models for Jerusalem. The model you are using is a European one—your architecture, your planning, your traffic planning, your urbanism is non-

indigenous. It doesn't fit, neither the landscape nor the conditions. What is more, the model is long gone in the very areas from which you have taken it. You are copying old-fashioned models. . . . More and more the indigenous models you have ignored under your own noses are being studied and emulated throughout the world—the Mediterranean cluster of buildings organized into intricate three-dimensional architectural villages, dense, urban, related to the landscape, inward-turning, environmentally sound—are the patterns that are more appropriate to your own conditions and needs."

Moshe Safdie complained of the irrelevancy of the Plan to change and to the formal deformations brought by change. Goran Sidenbladh, an architect and planner from Stockholm, viewed the road network as an expression of naivete, an innocence which asserted itself again in the imposition of an architectural ethnocentrism: since one man's slum is another man's *spolia optima*.

The quality of criticism—sometimes acrid, often witty and sarcastic, invariably serious—nonetheless provoked in Philip Hendy (art historian and director of the British Museum) the comment that criticism of the Master Plan was not adequately constructive.

Constructive critique certainly came from Britton Harris, a planner from Philadelphia, who suggested that the Plan for Jerusalem be extended beyond city

limits to include two or three satellite cities related to high-speed rail transportation between Jerusalem and Tel Aviv. This proposal implies possibilities of growth not merely for the city alone (so limiting in the Master Plan) but with an awareness of regional and national development.

Roslyn Lindheim from the University of California was concerned about whether the planning body was representative of all the people of Greater Jerusalem. If not, she said, there would be difficulty in deciding appropriate policy, and she questioned whether the principles of such policy would be valid.

The bluntness of the criticism, and its all-embracing character, led Mayor Teddy Kollek to say:

"All of us, even the planners, had some doubts about the Plan. The criticism presented was much more devastating than anyone expected. Anyone who says he likes criticism is a hypocrite."

Responding to critics of the Plan's road scheme, Kollek argued that the visiting professionals were demanding of Jerusalem what they had failed to accomplish in their own cities:

"You would like to drive up in big cars but you want us in Jerusalem riding on donkeys. No matter how charming and picturesque that might be, the rest of the world forges ahead into the 21st century."

One of the lessons of the Jerusalem Conference is that development of any city is not simply the work of architects and planners. In fact, recent events would lead one to believe that the foreign participants were simply talking to themselves. In determining the philosophical direction and the structure for any acceptable plan for the future, the most important factors are the immediate and long-range priorities stemming from political, economic and social considerations. Obviously, the unstated political considerations were without question the most important factors in determining what was to be built, and where, and how.

As a result of the Conference, Mayor Kollek committed himself to restructuring the course of the proposed development, and had, in fact, held up construction on new housing projected for the hills surrounding

the city—only to be reversed in this decision by the Ministry of Housing. Foreign participants in the conference may well have wondered what they were invited to Jerusalem to do.

It would seem, that in being isolated from the significant political considerations, and having no participants with power in the political realities, the visiting architects and planners were being given—ultimately—no voice either in the real or the theoretical planning. In spite of all criticism expressed by the foreign participants, the Ministry of Housing has stated that it is building in conformity with key aspects of the Master Plan. (U Thant and the U. S. government then each protested Israel's unilateral action in the controversial city.)

Mediocrity can be discovered in Eshkol Heights or Jackson Heights. We go to Jerusalem and criticise their superways but the New Jersey Turnpike is not a paragon. We wonder how to impede bad housing, deplorable because of its lack of urbanistic quality, but its mediocrity is not merely an Israeli but an international problem.

Who can say how big Jerusalem should be, will be, can be, won't be, must be? Can the architects and planners? If Jerusalem became a world city for culture and religion then the current forecasts would be very different. The web—political, social, economic—is half-woven but there is a desperate need for a loom, a pattern, an evolutionary principle which incorporates both the promise of growth and the defect implicit in uncontrolled growth. Only when these questions are addressed can one begin to speak of forms, relevant or irrelevant, for the unique situation that is Jerusalem forever.

**Participants from abroad: Christopher Alexander (U.S.), Max Bill (Switzerland), Etienne Boegner (U.S.), Werner Duttmann (W. Germany), R. Buckminster Fuller (U.S.), Luigi Gedda (Italy), Charles M. Haar (U.S.), Lawrence Halprin (U.S.), Sir Philip Hendy (England), Britton Harris (U.S.), Philip Johnson (U.S.), Louis Kahn (U.S.), Karl Katz (U.S.), Denys Lasdun (England), Roslyn Lindheim (U.S.), H. Mayerovitch (Canada), Richard Meier (U.S.), Samuel R. Mozes (U.S.), Isamu Noguchi (U.S.), Paul Peters (W. Germany), Sir Nikolaus Pevsner (England), Luigi Piccinato (Italy), Monica Pidgeon (England), Ulrik Plesner (England), Diana Rowntree (England), Moshe Safdie (Canada and Israel), Willem Sandberg (Netherlands), Goran Sidenbladh (Sweden), Gilbert Weil (France and Israel), Bruno Zevi (Italy), Robert Zion (U.S.).*



THE
GREENERY

rock

UPDATED BAZAAR

Shopping center at new Connecticut "village" has market stalls along an indoor street

The Bazaar at Heritage Village, in Southbury, Conn., is in effect a one-building shopping center, with tenant spaces along an indoor mall. But there is no sharp separation between individual shops and the mall that links them together. It is as if the merchants had simply occupied portions of the 400-ft.-long timber shed—like merchants in an Oriental market.

Heritage Village itself does not fit easily into any well-defined category; it might be called a semi-retirement village. Every family that moves into this vast countryside condominium (eventual population: 5,000) must have at least one member over 50 years old, and no members under 18. But the village differs from most retirement communities in several respects: it is located in the urban Northeast, near employment centers for those not yet retired; it has been laid out and designed in a woody contemporary style, with great respect for the roll-

ing countryside, by Planner-Architects Callister & Payne of California; and it is not isolated from the world.

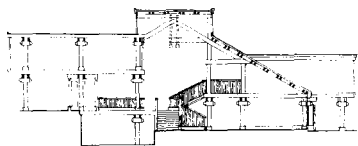
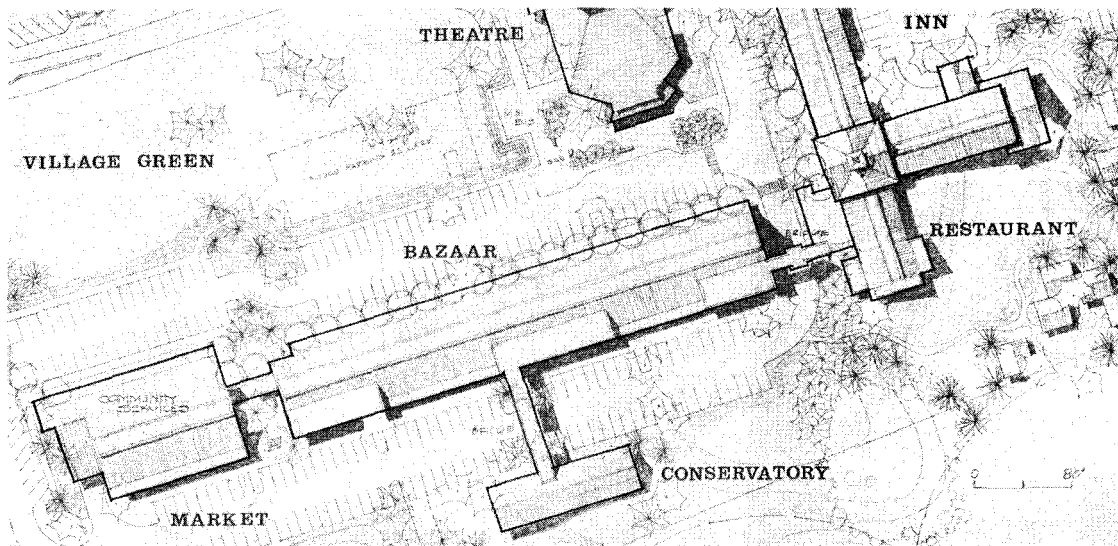
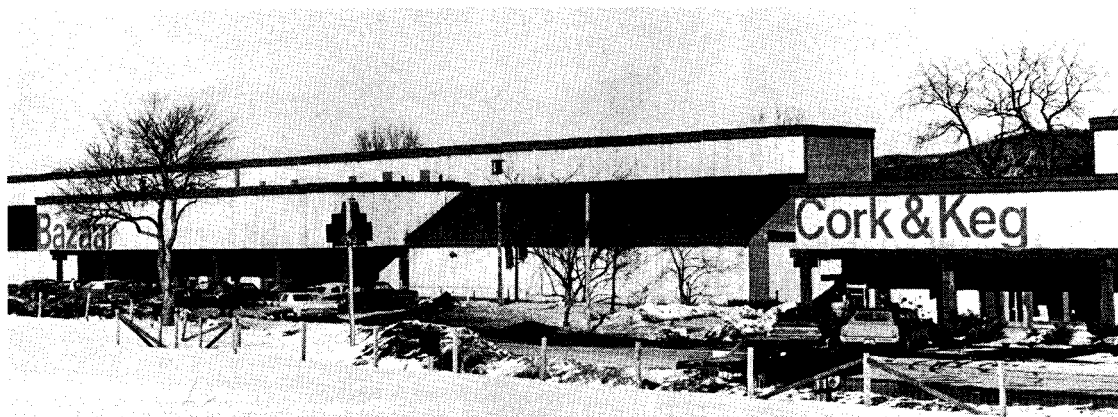
Instead of opting for sterile serenity behind guarded gates, the Heritage Village developers decided to invite residents of nearby towns to patronize shops, banks, restaurants, and an inn which were originally planned to meet the needs of village residents. With outside clientele to strengthen their economic base, the enterprises around the Village Green (plan, below) can offer greater diversity.

"Injecting a spirit of fun into the shopping experience has been the overriding concern in the planning, architecture, and selection of tenants," says Otto Paparazzo, vice president of the developing corporation. There were plenty of applicants for the 26 rental spaces inside the Bazaar. "But," reports Paparazzo, "we wouldn't settle for just anybody who could sign a lease and give bank references. We

wanted unusual tenants." And, in general, the owners were not interested in branch locations of shopping chains; they wanted individual, local merchants.

The interior of the Bazaar building is visually continuous for its whole 400-ft. length. Changes in level (adjusted to different grade levels on the two long sides) help to define areas of individual shops. Despite its casual layout, the interior is strongly unified by its massive structural frame, illuminated by clerestories at the peak of its vast roof. Bold identifying graphics by Barbara Stauffacher—cubes suspended from the roof—are easy to spot from any angle or distance.

"It is important," says architect Warren Callister, "to realize that this is really a stage set; the merchants themselves, their flair, special lighting, and graphics will pick up the key and mood. The building is big, heavy framed—not too relaxed—suggesting excitement."



A big white "A" on a blue cube, designed by Barbara Stauffacher, identifies one of the five "docks" of the 400-ft.-long Bazaar interior. The two different entrance levels of the Bazaar, and its mezzanine sales and storage areas are shown in a typical section (above). The cedar board exteriors, with more Stauffacher graphics, fit the design character of the growing village center (plan, right).

The casual and individualistic decor of the Bazaar's 20 shops is given an orderly setting by the boldly scaled wood framing, the uniform background of cedar board walls, and the broad areas of identifying color that run along balcony and stair parapets. The color used in Dock A is blue, in Dock B, red, etc. Lighting varies from coffee-can downlights (top photo) to light valances spanning between beams (below).

FACTS AND FIGURES

The Bazaar at The Village Green, Heritage Village, Southbury, Conn. Owner and contractor: Paparazzo Development Corp. Community planners: Callister & Payne (Charles Warren Callister, principal-in-charge). Associated architect: George Yatrous-sis. Structural engineer: Glenn R. Nelson. Graphics consultant: Barbara Stauffacher. Building area: 55,180 sq. ft. Construction cost: \$850,000 (land and site development, \$50,000; furnishings and equipment, \$25,000) (For a listing of key products used in this building, see p. 69.) PHOTOGRAPHS: Philip L. Molten, except page 59, William Lyons.

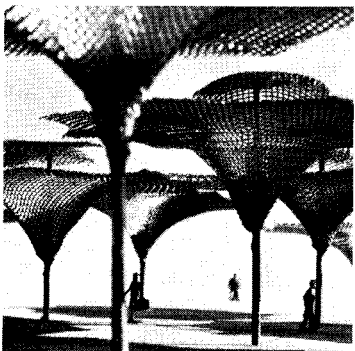


FORUM

(continued from page 19)

who is director of the Lightweight Construction Center at Washington University in St. Louis. Medlin, of course, consulted with Otto on its design.

The show will be placed on what is known as the garden terrace, actually the roof of one wing of the museum that has a long flight of shallow steps leading down into the sculpture garden. The membrane and tension cables of the exhibition structure will be suspended from two masts which join at the top and straddle the tent in the form of an inverted V, the highest point being 50 ft. from the



Umbrellas for '71 exhibition, Cologne

ground. The prestressed, tensile membrane will be made of virtually translucent vinyl-coated polyester and will never touch the ground, seeming to hover over the terrace. The tent, covering some 2,300 sq. ft., will have a domed center and a sail-shaped extension extending over the steps down to the garden.

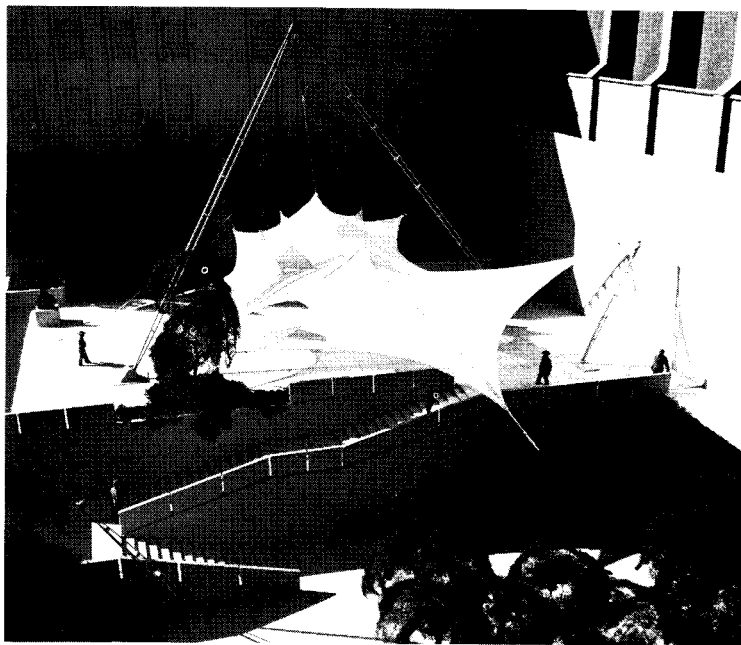
The exhibition itself will include 54 projects in 99 jumbo photo enlargements and many diagrammatic drawings, sealed into 7 by 4-ft. weatherproof, glass fiber panels.

Designed for easy dismantling and installation, the show will travel after it closes at the MOMA on September 30. Negotiations with several cities are under way.

MINORITIES

SUPER SUPERS

Dr. Elihu Richter of the Mount Sinai School of Medicine in New York City testified last September before the U. S. Senate Select Committee on Nutrition and Human Needs: "Severe health and safety burdens are imposed on people who live in buildings with poorly functioning boilers, broken plumbing systems, rotting window frames and missing



Tent structure for exhibition at MOMA

window guards, harborages for insects and rodents, stagnant water pools in cellars and yards, inadequate waste management and disposal arrangements, peeling of leaded paint, unlit and cluttered passageways and garbage-filled courtyards."

Dr. Richter is a board member of Environmental Extension Service, Inc., an East Harlem community coalition of housing groups, property owners, tenants, and job-training groups that functions in cooperation with the Mount Sinai School in training East Harlem residents to be "super" superintendents. The object of the program is to save residential buildings from rapid decay and abandonment. Funded to date by state and city health agencies, the Extension Service, which has graduated its first class of trainees, is seeking new support from housing, job-training and related agencies.

Four days a week trainees attend classes in carpentry, plumbing, electrical wiring, boiler repair, plastering, etc., at a vocational and technical high school. At the neighborhood district health service they attend lectures and receive field assignments on such subjects as pest and rodent control, sanitation, fire prevention, and tenant-owner relations. One of their first field work projects was laying new floors, plastering, painting and partitioning their own new headquarters at 2nd Ave. and 109th St.

The course takes two months

and, on graduating, the "extension agents" are ready to work under Extension Service contracts with individual building owners.

PREDICTABLE PHILANTHROPY

On March 8, the members of the New York Chapter, AIA, voted to assess themselves \$10 each per year for the next five years to support scholarship programs for minority architecture students. The amount per member may seem small, but the action is significant, because it takes fund-raising for this purpose out of the realm of unpredictable contributions and guarantees a minimum level of support. The New York organization has had a long headstart on aid to minority students, with a scholarship program dating from 1963 and the widely admired ARCH program (June '70 issue) for students without the standard academic credentials.

But *continued* funding of these programs has been in jeopardy this year. Voluntary contributions have dwindled as the recession deepened, and foundations which had helped generously to initiate programs are not ready to support them indefinitely.

With these mandatory assessments providing a predictable base, the chapter will not have to cut off funds to students already in school. And, armed with this clear indication of the chapter's commitment, its of-

ficers hope to be able to raise as much as \$45,000 more per year from other sources to supplement the \$15,000 to be collected among the architects.

QUOTE-UNQUOTE

EARLY WOMEN'S LIB

"There can be no doubt but that the study of domestic architecture is well suited to a feminine taste, and it has, moreover, so many different ramifications, that it affords frequent opportunities for turning good abilities to profitable account; for if we even allow the objections that might be raised by some against the actual practice of architecture by women, such as the necessity for their climbing ladders, mingling with the mechanics and laborers during the progress of the works, and having frequently to attend to the superintendence of buildings in disagreeable weather, and at all sorts of different levels, we must, nevertheless see at once that there is nothing in the world, except want of inclination or opportunity, to prevent many of them from being thoroughly expert in architectural drawings, or from designing excellent furniture . . .

I do not, it will be perceived, include in the difficulties to be overcome want of natural ability, for this certainly does not exist. . . .

There is a supply of inventive capacity and artistic feeling latent among them that deserves, in civilized countries and liberally-educated communities, a much wider outlet than can be furnished by the point of a [sewing] needle."

—CALVERT VAUX
Villas and Cottages, 1864.

TO HAVE AND HAVE NOT

"Each year the representatives of the cities come before the Congress, along with the Administration, to debate the needs of our urban areas. First we debate the size of the authorization request.

"Then, we return to the Hill to argue for full appropriations. Each time, the Administration presents its arguments, usually for lower levels of funding in the programs we are discussing. Now, however, the Administration has seen fit to carry the debate one step further. Appar-

ently, we must return to the Congress once again to argue whether the monies, which have already been authorized and appropriated, will in fact be spent."

—THOMAS J. D'ALESSANDRO
Mayor of Baltimore, in testimony before the Senate Housing and Urban Affairs Subcommittee, conducting hearings into the withholding of some \$1 billion from urban programs.

NOTES

PARADOX

Paradox is the theme this summer of the 1971 International Design Conference in Aspen. Special workshops using simulations and games will deal with American social institutions considered to be in trouble: marriage and family, learning and schools, aging and dying, consuming and corporations.

The fun and games will commence in June in the beautiful tent now a landmark on the Aspen Meadows—and, possibly, in other tents as well.

SAVE THE STOCK EXCHANGE

An organization, called the Landmarks Preservation Council, was formed Feb. 24 in Chicago for the purpose of saving that city's Old Stock Exchange Building—Louis Sullivan's last remaining office building in Chicago, considered one of his finest works, and scheduled for demolition this spring (Jan./Feb. '70 issue, page 43).

A task force of the organization is developing a program for the acquisition of the building by the city or other appropriate agency; for its transfer to a holding organization; and for its restoration and long-term preservation. The group will also serve as a focal point for public support.

Membership is open to all interested individuals and organizations. Dues are \$8.00 (or more on a voluntary basis) per year (\$3.00 for students). For information write: Landmarks, Room 325, 53 West Jackson Blvd., Chicago 60604.

PEOPLE

GLORY TO MAN . . .

In January, the twelve clerestory windows of the nave of Grace (Episcopal) Cathedral in San Francisco were dedicated.



Cathedral window of FLLW

Each depicted one of 12 apostles of "human endeavor" in 20th Century America, rendered in stained glass by Gabriel Loire of Chartres, France. The subjects—selected by the late Bishop Pike and Dean C. Julian Bartlett—range from Albert Einstein (natural sciences) to John Glenn (exploration).

The creative arts are represented by Frank Lloyd Wright; medicine by William H. Welch of Johns Hopkins University; social work and welfare, Jane Addams of Hull House; law, Justice Thurgood Marshall of the U. S. Supreme Court; industry, Henry Ford; labor, John L. Lewis of the CIO and United Mine Works; agriculture, Luther Burbank; education, John Dewey; letters, Robert Frost; government and politics, Franklin D. Roosevelt.

SUPER-POWER EXCHANGE

A delegation of Russian building professionals—architects, engineers, planners, and construction chiefs—headed by the Chief Architect of Moscow are expected to visit building sites and prefab factories in this country in April. Their itinerary includes New York, Boston, Washington, D. C., Chicago, San Francisco, Los Angeles and Houston.

The invitation was extended to them by an American group who visited the Soviet Union in

late September and October.

The American group was comprised of Dr. Nicholas Shorine, Architects Lewis Davis, Max Urbahn, Carl Koch, John Carl Warnecke; William Slayton, Executive Director of the AIA; Builder Richard Ravitch; Engineer Dr. Lev Zetlin; Howard Turner, Harold Berman, Mitchell Rosenthal.

Their extensive tour, at the invitation of Jermain Guishiani, Deputy Minister of Science and Technology and a son-in-law of Premier Alexsei Kosygin, ranged from Sochi, a mineral-bath spa on the Black Sea to Novosibirsk, a New Town carved out of the bleak Siberian woods.

AWARDS

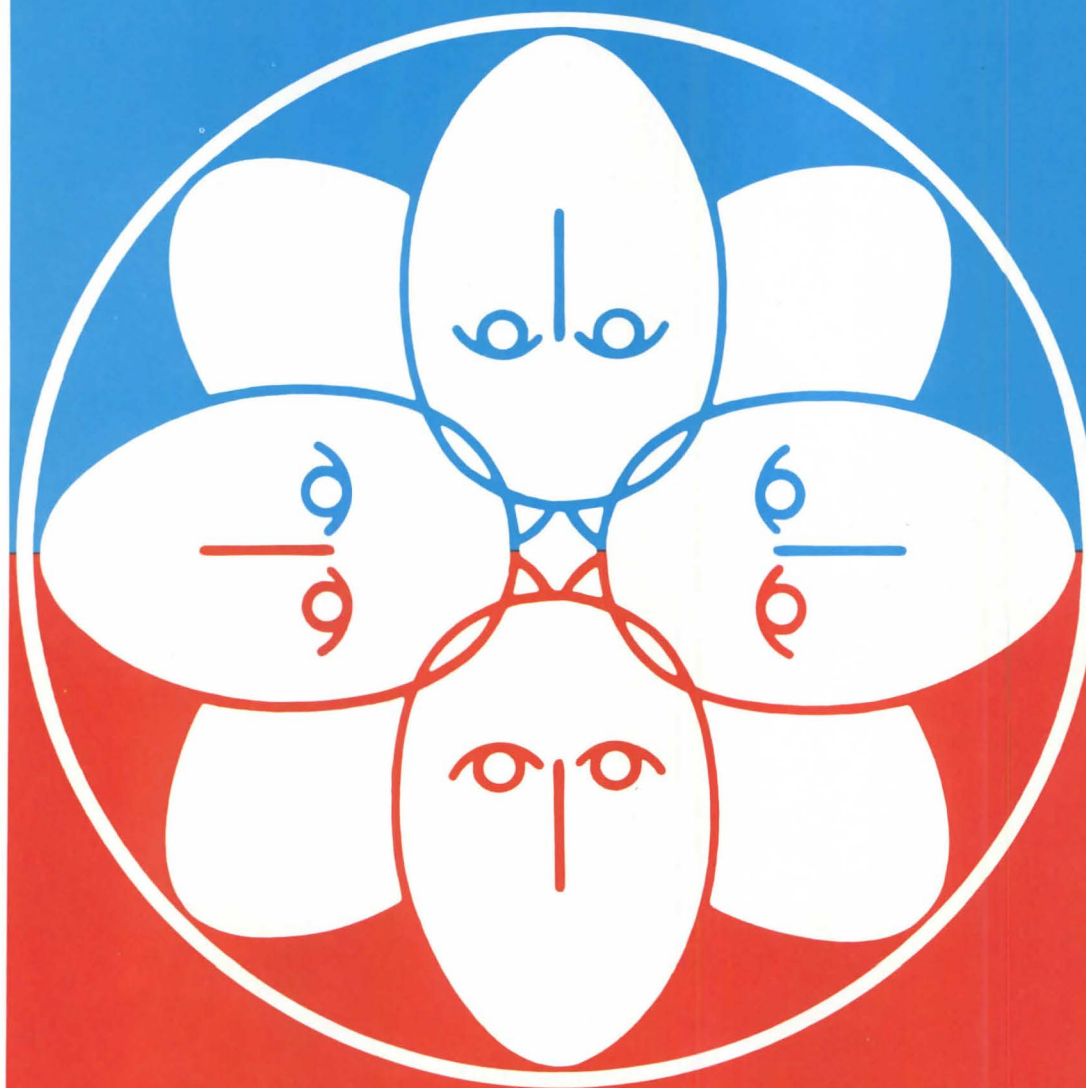
The AIA's annual honors awards—to be presented at the institute's convention in Detroit, June 20-24—were announced late in February. The Architecture Critic's Medal to the late Sibyl Moholy-Nagy was announced earlier (Jan./Feb. issue) as was the Gold Medal to Louis I. Kahn (March issue). The others follow:

Architectural Firm Award: Albert Kahn Assocs., Detroit, Mich.; Craftsmanship Medal: the late Wharton Esherick, Pennsylvania sculptor, furniture designer and artist; Industrial Arts Medal: Ceramicist Edith Heath of Sausalito, Calif.; Allied Professions Medal: Daniel U. Kiley, landscape designer; Architectural Photography Medal: Alexandre Georges; Citation of an Organization: San Francisco Bay Conservation and Development Commission; Architecture Critic's Citation: *Perspecta*, Yale architectural journal; Edward C. Kemper Award, which recognizes "an AIA member who has contributed significantly to the institute and to the profession,": Gerald M. McCue, San Francisco; Special Citation: Ansel Adams, photographer of the American West, whose work, says the AIA Board of Directors, "has done more than most words to move people to action, to see and protect the art found in nature."

PHOTOGRAPHS: Page 17, Oliphant The Denver Post. Page 18, Westinghouse Photo (left), Casey Blake (top). Page 62, courtesy Museum of Modern Art.

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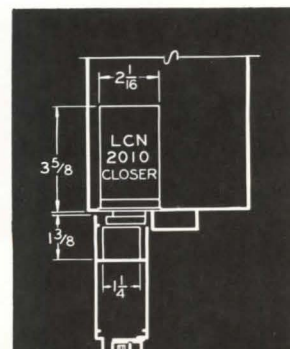


Engineering-Technology Building, West Valley College, Saratoga, California. Architects: Joint venture—Reid and Tarics, San Francisco; Higgins and Root, Los Gatos, Cal.

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Wehmueller's, West County, Jewelry Store, St. Louis, Missouri. A striking illustration of how "open or closed," the two Kinnear doors in this mall-way store fulfill every requirement. And, notice how the door blends well with the tasteful architectural design of the store facade. The open door completely disappears in a minimum storage space above the lintel, using no valuable display or work area.



Kinnear Rolling Grilles, that operate on the same principle as the Rolling Doors, have found great acceptance from store owners. Where display, ventilation and light is important during closed hours, Kinnear's Grilles — made of steel or aluminum — are extremely rugged but very compatible to building design. Grilles are also ideal to close off corridors and stairways to traffic.

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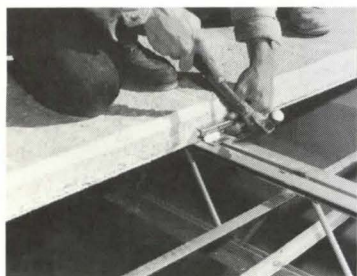
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PRODUCT REVIEW

This month's Product Review concentrates on structural materials and systems for housing, commercial buildings.



ROOF DECK SYSTEM

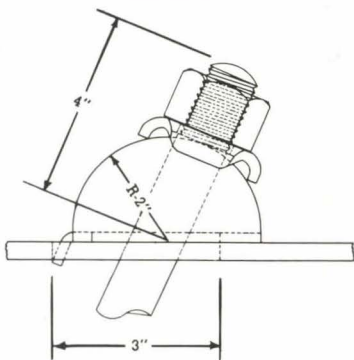
Tectum II roof deck, which is manufactured by National Gypsum Co., combines the thermal insulation of urethane with the company's standard Tectum product to form an extremely lightweight roof deck. It is composed of long wood fibers bonded with an inorganic binder under heat and pressure. The urethane is then foamed in place to the top surface of the panel, where it penetrates and expands, resulting in integrated, single-unit construction. The product comes in a wide variety of lengths and widths and may be used in any geographical area for commercial, industrial and institutional buildings.

On Readers Service Card, circle 101.

TIE-ROD FASTENER

A new erection-time and material-saving device may be used for any tie-rod function in structural steel and timber facing. The unit automatically aligns the bracing rod and maintains the rod in straight-line tension. It is pressed from steel for use with tie-rod and bracing rod diameters of 1-in., 7/8-in. and 3/4-in. Heltzel Co. is the manufacturer.

On Readers Service Card, circle 102.



INSULATING CONCRETE

A new insulating concrete, containing small glass nodules, has been produced by the Pittsburgh Corning Corp. Called Celramic Insulating Roof Fill, the new product permits easy installation of durable insulating roofs. The system works, says the company, because the glass beads in the aggregate do not absorb water, so the poured roof cures very quickly for an insulating roof fill.

On Readers Service Card, circle 103.

CONCRETE RETARDER

Perma-Tard, a concrete surface retarder, makes decorative, exposed aggregate finishes. Manufactured by the Permagile Corp., the new product is a specially formulated coating that may be applied by brush, spray or roller to concrete panel forms before the concrete mixture and aggregate is poured. The product retards the cure of the concrete it contacts and after the piece is pulled from the form, the uncured surface may be removed by brush or water spray. A wide variety of finishes may be obtained: from a light sandblast effect, to a deep etched look that exposes the concrete aggregate up to 1/2 in.

On Readers Service Card, circle 104.



ASBESTOS CEMENT PANELS

A new color-fused cement asbestos building panel has been introduced by Kaiser Aluminum/Mirawald Products. Called Miraweld, the new product is available in a wide variety of colors and sizes. Applications may vary as design dictates, but may include such uses as facings over new and existing structures, curtain wall and window wall treatments, balcony fronts, soffits and fascia, mansard roofs and store fronts. The panels come with a smooth, sanded, natural gray asbestos board back that may be painted to match interior color schemes; they are also available laminated back to back with a Miraweld finish on both sides; or they may be laminated to an insulated core.

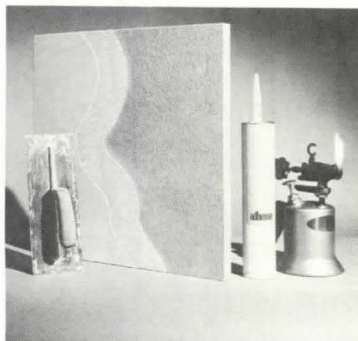
On Readers Service Card, circle 105.



FLOOR SYSTEM

A new residential floor system for low-rise apartments and single-family homes has been developed by the Portland Cement Association. Called the I/D Floor, the system has three components: cast-in-place concrete, steel purlins, and leave-in-place fiberboard forms. The forms (manufactured by Mansfield Tire & Rubber Co.) rest on the steel purlins, which serve to reinforce the floor. The cavity space is used for electrical, plumbing, heating and air-conditioning ducts and conduits. The system is designed to span 24 ft. and standard tubular supporting framework is used for shoring. The floor is 12 in. thick.

On Readers Service Card, circle 106.



INSULATION

INSO-BAK Mineral Fiber Rigid Insulation is a one-step laminated furring, insulating and plaster base for exterior masonry and concrete walls. Separate lathing is unnecessary and the product makes possible interior surfaces in less time and at lower in-place costs than metal furred or laminated rigid foam systems. One side of the 1-in.-thick insulation is designed for an adhesive bond; the other side is roughened for plaster. It comes in 2-ft. by 8-ft. size and is now available in the Midwest, manufactured by the U. S. Gypsum Co.

On Readers Service Card, circle 107.

(continued on page 68)

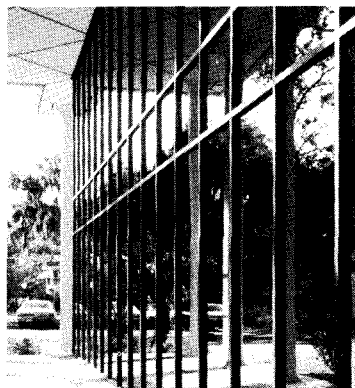
PRODUCT REVIEW

(continued from page 67)

WALL PANEL SYSTEM

A new wall panel system promises to cut construction time and offer a thermal insulation value nearly four times that of glass fiber. The panels are made of metal strips of aluminum or steel and are available in a choice of colors in baked-on vinyls, plastisols, fluorocarbons, laminents, etc., in smooth or textured finishes. Polyurethane is foamed in place between the metal skin surfaces, making each panel a solid unit. The joints may be filled with foam on site and the panels also have a vertical edge recess in the foam that allows two panels to be linked by a nonconductive PVC cross member. The manufacturer is the Building Systems Division of Phelps' Dodge Cable & Wire Co.

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CURTAIN WALL

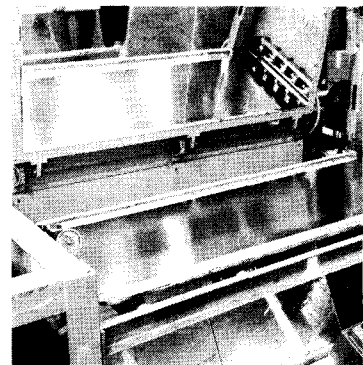
Amarlite/Anaconda has introduced a new wall system, PBS-380, in single or double glaze versions. The new system features a thermal break of vinyl that provides insulation from outside to inside metal, preventing condensation damage to wall coverings, drapes and carpeting. There are a variety of mullion depths for design flexibility; vinyl and neoprene weather strips are inserted prior to installation. A stick-type system, PBS-380 uses clips and concealed fasteners and is designed for low-rise or slab-to-slab construction.

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GLASS/CERAMIC CLADDING

Pyram architectural facing, manufactured by the Corning Glass Works, boasts easy maintenance and durability. It is made of a glass-ceramic material that exhibits superior strength and is resistant to stains, scratches and impact, according to Corning. It is also impervious to urban corrosion, such as auto exhaust. Colors are an integral part of the material and cannot wear away. The facing comes in panels that may be attached to a hard base with adhesive; the panels are made in sizes up to 4½ ft. wide and 12 ft. long.

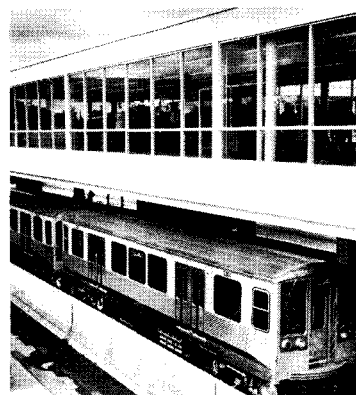
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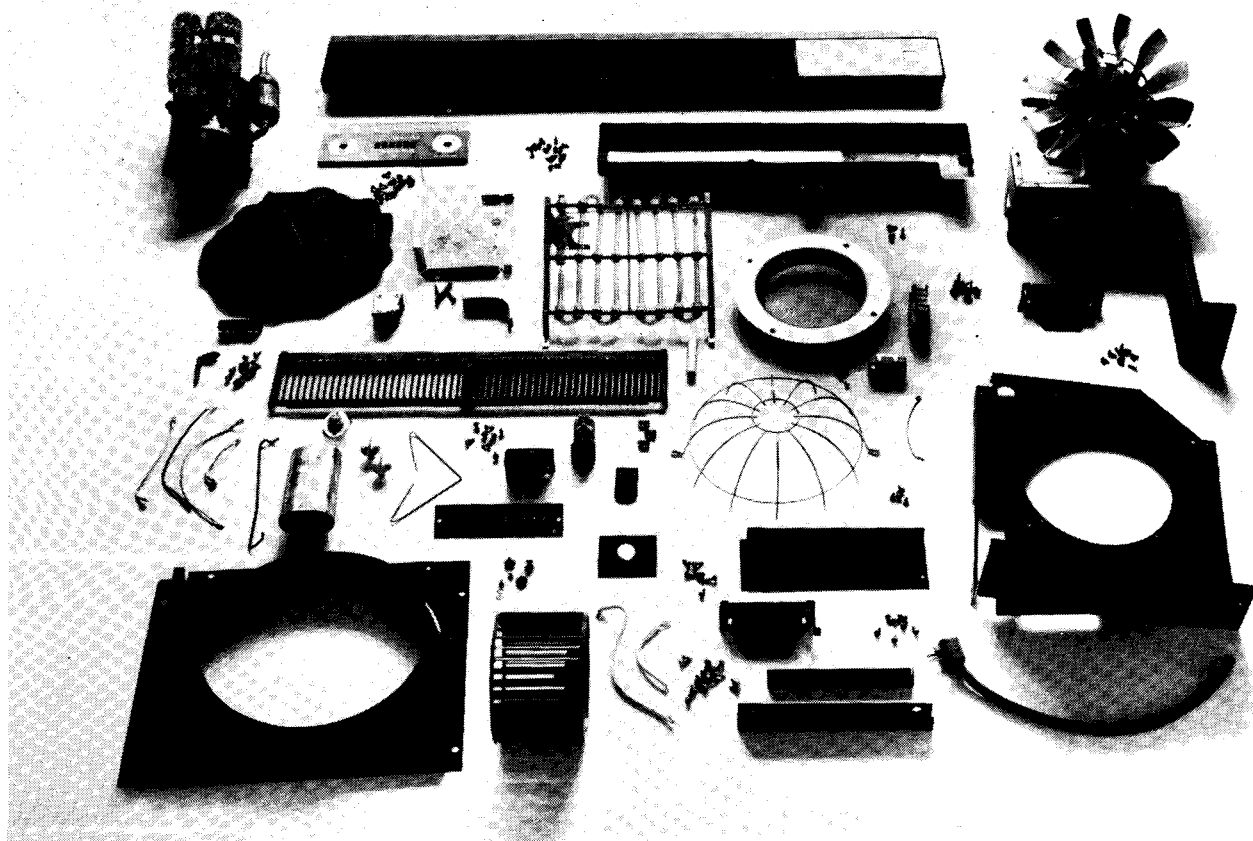
NEW METAL

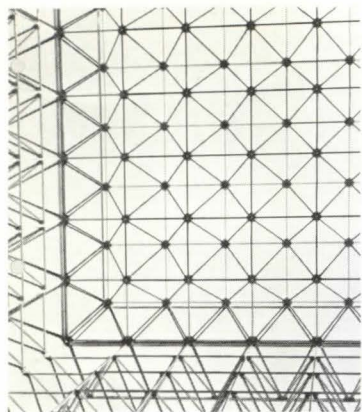
A new architectural metal is Ti-Guard, which is composed of copper metallurgically bonded to stainless steel. It is manufactured by Texas Instruments, Inc. and combines the strength of the steel with the appearance of copper. Cheaper than copper, Ti-Guard can be bent, soldered and spot-welded. And, says the manufacturer, the new material will not buckle, which is a common tendency of most sheet metals. Architects may specify Ti-Guard instead of a heavier-gage metal or a backing system: Ti-Guard is roller tension-leveled to flatness specifications of 1.5 per cent.

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We made a few changes





SPACE FRAME

The Unistrut Corp. space frame is lightweight and made of easily handled standardized parts that may be bolted together to form roofs of varying modular configurations, lengths and widths. Random location of supports and corner overhangs in two directions are part of the system's multi-directional structural behavior. The system is available in 4-ft. and 5-ft. planning modules. The company will aid architects and engineers in design.

On Readers Service Card, circle 112.

The following is a listing of the key products incorporated in some of the buildings featured in this issue:

OLIVETTI CORPORATION OF AMERICA FACTORY BUILDING. ARCHITECT: Louis I. Kahn. (Materials & Manufacturers as submitted by the architect). CONCRETE & CEMENT: Alpha. BLOCK: York Building Products, Camden Lime Co. STRUCTURAL STEEL: Bethlehem. FENESTRATION: Coast Line Steel Products Co. GLASS: PPG Industries. DOORS: Coast Line Steel Products, Weyerhaeuser. HARDWARE: Russwin. TILE: American Olean. PAINT: Devco Reynolds. ELECTRICAL DUCTS and EQUIPMENT: General Electric. LIGHTING FIXTURES: General Electric. PLUMBING FIXTURES: American Standard, Olsonite. PIPING: U.S. Pipe & Foundry. HEATING BOILERS: CAM Industries. UNIT HEATERS: York Corp. UNIT VENTILATORS: Penn Ventilator, ITT Nesbitt. HEATING VALVES: Bell & Gossett. AIR CONDITIONING: Baltimore Air Coil, York Corp. DIFFUSERS & PUMPS: Tuttle & Bailey, Aurora. SPRINKLER SYSTEM: Central Automatic Sprinkler Co. WATER COOLERS: Halsey Taylor.

SEATRAN LINES, INC. GENERAL OFFICES & TERMINAL FACILITIES.

ARCHITECTS: Skidmore, Owings & Merrill. (Materials & Manufacturers as submitted by the architects). CONCRETE & CEMENT: Thomas Henry Materials, Inc. BLOCK: Faber Cement Blocks Co. STRUCTURAL STEEL: Arrow Iron Works. CURTAIN-WALL: General Bronze Corp. FLOOR & DECK SYSTEMS: H. H. Robertson. ROOFING: Philip Carey Co. ACOUSTICAL MATERIAL: Jacobson & Co. GLASS: LOF. ELEVATORS: Haughton Elevator Co. HARDWARE: P. F. Corbin, Stanley, Rixon. PAINT: M. A. Bruder Paints. ELECTRICAL DUCTS: H. K. Porter. ELECTRICAL EQUIP: General Electric, Westinghouse. LIGHTING FIXTURES: Lightolier. SITE LIGHTING: Holophane Co. PLUMBING FIXTURES: Kohler Co. PIPING: Alabama Pipe Co. HEATING BOILERS: Cleaver-Brooks. UNIT HEATERS & VENTILATORS: Trane Co. CONTROLS: Robertson Controls. AIR CONDITIONING: Trane Co. DIFFUSERS & PUMPS: Tuttle & Bailey, Aurora Water Pumps. FANS & VENTILATORS: Swartwout Co., Davidson Fan. INTERCOM: Executone. RADIO & TV SYSTEMS: ITT. AUDIO VISUAL EQUIP: Kodak Sune Projectors. CONVEYORS: Mosler Co. SPRINKLER SYSTEM: Seco Automatic Sprinkler Co. CEILING: Celotex. WATER COOLERS: Haws Co. VENETIAN BLINDS: Levolor-Lorentzen. KITCHEN: Dwyer. SKYLIGHT: Lord & Brunham Skylight Co.

EDUCATION BUILDING FOR ST. BERNARD'S SCHOOL. ARCHITECT: Victor A. Lundy. (Materials & Manufacturers as submitted by the architect). STRUCTURAL STEEL: Buie Steel

Corp. CURTAIN-WALL: American-Paterson Glass Co. FLOOR & DECK SYSTEMS: Timber Structures, Inc. ROOF: The Glidden Co. BUILDING SEALANT: Dow-Corning Corp. SKYLIGHTS: Super Sky Products. FENESTRATION: American-Paterson Glass. GLASS: LOF. HARDWARE: Sargeant Co. TILE: American Olean Tile. LIGHTING FIXTURES: Gotham. PLUMBING FIXTURES: Crane, American Standard. UNIT VENTILATORS: American Air Filter. INTERCOM: Simplex Time Recorder Co. WATER COOLER: American Standard. FURNITURE: Knoll.

ESTEE LAUDER LABORATORIES. ARCHITECTS: Davis Brody & Associates and Richard Dattner & Associates (Materials & Manufacturers as submitted by the architects). CURTAIN-WALL: Bettinger Corp. ELEVATORS: Burlington. PLUMBING FIXTURES: American Standard. HEATING BOILERS: Cleaver-Brooks.

THE BAZAAR at THE VILLAGE GREEN. Planners: Callister and Payne. (Materials & Manufacturers as submitted by the planners). ROOF MATERIALS: Flintkote. GLASS: LOF. EXTERIOR DOORS: Howard Products. HARDWARE: Sargeant. PAINT: Benjamin Moore; Cabot. ELECTRICAL EQUIPMENT: General Electric. LIGHTING FIXTURES: Lightolier, Prescolite. PLUMBING FIXTURES: American Standard. HEATING and AIR CONDITIONING: Lennox. SPRINKLER SYSTEM: Star, M. J. Daly Co. FURNITURE: Stendig. FABRICS: Marimeko.

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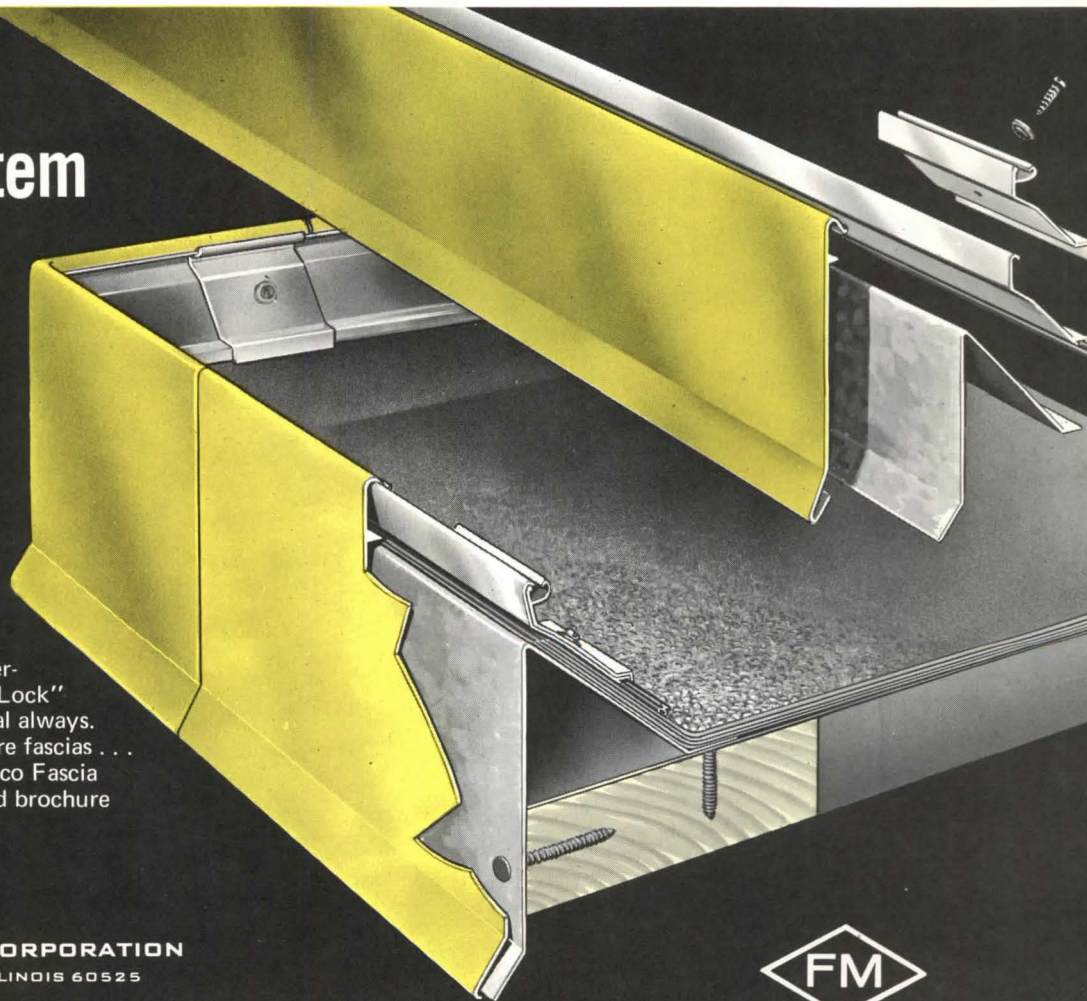
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MODEL CITY. By Fred Powledge. Published by Simon & Schuster, New York City. 350 pp. illustrated. \$7.95.

REVIEWED BY VINCENT SCULLY

"Model City" is about the failures of redevelopment in Mayor Richard Lee's New Haven. It traces the history of redevelopment up to 1967 cursorily and as a "Prelude" to New Haven's riot of that year. The bulk of the book describes the city administration's shabby treatment of the local Hill Parents Association with all the ramifications for the official redevelopment organizations such as Community Progress, Inc., Model Cities and so on.

For a number of New Haveners, including myself, Fred Powledge's treatment of his important subject will seem a superficial and rather ambivalent one, which tends to fall into the "If-you-can-bear-to-hear-the-truth-you've-spoken / Twisted-by-knaves-to-make-a-trap-for-fools" category. Powledge (author of "Black Power, White Resistance") is not a knave, but he does combine a very limited knowledge of New Haven with some stereotypical ideological hang-ups, so that the only critics of redevelopment in New Haven whom he does not ignore or short-change are the black militants such as Fred Harris, Ronnie Johnson and Willie Counsel, and he uses them to express what seems to be his major conclusion: the present political system has had it. "Democratic politics are dead," he quotes Willie Counsel as saying (Powledge uses the phrase as a chapter heading) and "what I want is people controlling their own destiny."

How they are to do so by

Mr. Scully, a member of Forum's Board of Contributors is professor of art history, and master of Morse College at Yale. This review is reprinted by permission of The New York Times Company, ©1971.

means other than those of democratic politics, Powledge does not say. The stand he seems to take for neighborhood control of redevelopment projects is not a new or startling one, nor does he develop it further in a theoretical sense. But this is fundamentally what his book is about, not redevelopment as a whole but its special failure in terms of citizen participation. He attributes that failure, and rightly, though he is by no means the first to do so, to underlying racism and to an eventual collapse of public will, and he sees the era when it might have flourished as now tragically ended with the anti-urban reaction of the Nixon-Agnew Administration.

Powledge's method is journalistic, based upon interviews not only with the militants noted above, and a very few of their allies, but also with the Mayor, the Redevelopment Administrator (whom New Haveners may well be surprised to find described as "scholarly-looking"), the Chairman of the Citizens Action Commission, and various bureaucrats. Here Powledge's ambivalence manifests itself, because while he purports throughout to be in serious disagreement with the policies of these people, he still seems to accept statements made by them with a credulity which those of us who have known them longer would be loath to accord.

On the other hand, it becomes clear that the politicians and administrators of redevelopment are not his primary targets. It is the so-called "liberal" community which he is after, and especially the Yale community and Yale itself as an institution, about which he is consistently snide and whose purposes he questions. Hence he repeatedly asserts or suggests that redevelopment had gone unchallenged by local liberals until "critics surfaced" after the riot of 1967, and he solemnly quotes the assertion of one of his informants (just moved down from Boston and heavy with drama) that Yale scholars, unlike their Harvard counterparts, were too intimidated, or "implicated" to oppose City Hall in records at such gloating length.

This is simply not true. From 1965 onward (and I, too, wish that it could have begun earlier), there was persistent and sus-

tained opposition from Yale sources to redevelopment in many of its aspects, most particularly including its treatment of neighborhoods and communities. This opposition involved direct exhortation of the Mayor, public lectures, testimony before committees and public meetings in New Haven and Hartford, television appearances, newspaper accounts, articles, books and so on. By 1966, long before the riot, most of the conclusions about redevelopment in New Haven which Powledge advances as his own or as those of his later informants had already been formulated, and they have been used as ammunition by various groups and individuals, including Powledge, to my "American Architecture and Urbanism," New York, 1969, pp. 244-255, 262, for a short account and partial bibliography.)

It should be said for the record that such opposition had some success. It not only blocked an Inner Circumferential Ring Road, which would have cut Newhallville off from the center of town, but it also saved East Rock Park, at least temporarily, and, on the other side of town, eventually helped reduce Route 34 to more manageable proportions. It surely helped to induce the construction of low-cost public housing which, despite Powledge's curious hesitations on the subject, had in fact been distinguished by its absence before. In 1966-67 it had already defeated the megalomaniacal project for a government center, saved the post office, and succeeded in forcing its attack upon "cataclysmic" redevelopment, so apparent in that project, to be applied to a newly proposed Hill Neighborhood project as well.

In rather muddled response to that opposition, Redevelopment hired a new architect (again well before the riot) who threw out the agency's cataclysmic proposal but proved incapable of dealing with the social complexities involved or resisting the agency's continued pressure for further demolition. His refusal, despite repeated urging by individuals at Yale, to meet with representatives from the neighborhood in time to talk things over before confrontational rhetoric set in was symptomatic of a generation's failure to do so, as I am sure

Mr. Powledge would have agreed if he had troubled to look into the architectural part of the story.

Yet one suspects a certain bias in this regard among his major informants, including those at City Hall, and surely in himself as well. He doesn't want Yale people or Yale itself to have played a role in opposition until violence frightened them into it, because he is out to discredit the liberal process. Perhaps this explains the truly dastardly attack on the Rev. William Sloan Coffin, which he records at such gloating length, as well as his obscenely protracted account of the ugly scene at Mayor Lee's speech of renunciation, his "Hail and Farewell."

The tone of Powledge's book is a fashionable one at the present time; it is one more indication of the truth of a proposition which I advanced in public in New Haven in 1966: that Redevelopment and Vietnam were intimately connected, and were indeed the two massive failures of American liberalism—by which, in the end, it blew everything it had gained before. The two phenomena were alike in many ways. They were both based on heroic concepts which were half a generation out of date, and they were alike in the arrogance of their intrinsic, if more or less unconscious, racism. Their effects have been similar. They have played complementary roles in the polarization of the country and in the shift of power away from the liberal center toward more extremist positions: toward the right, of which by no means the most radical wing now so squalidly holds the national executive power, and toward the left, whose current mythology and expedient distortions are more or less systematically embodied in Powledge's book.

What is moving, though, is how Lee emerges as a kind of hero through it all, a flawed hero like all modern men, more personally vindictive when his policies were criticized (like Lyndon Johnson) even than Powledge seems to know, but a hero with a vision nonetheless and, like all our most recent crop of heroes, full of a hubris that did us all some damage at the last.

READERS SERVICE FILE

PRODUCT LITERATURE

To order material described, circle indicated number on self-addressed Reader Service Card, facing page 70.

BATHROOM FITTINGS

The new Aquarian lavatory and bath fittings from American Standard shown in a colorful brochure. The makers claim that the unique ceramic washer system virtually eliminates replacement, repairs or lubrication and guarantees long life. On Readers Service Card, circle 200.

Washroom Data. Handy guide to washroom layout is available from Scott Paper Company. It shows the most efficient location of toilet requisites for public washrooms. On Readers Service Card, circle 201.

New dimensions in acrylic technology, architectural applications, modular bathrooms, chairs and tables, sinks, sculptured mural, lighting fixtures are illustrated in a brochure from Swedlow. On Readers Service Card, circle 202.

CEILING SYSTEMS

1971 Guide to ceiling systems from Armstrong is now available. It includes lighting fixtures, sound absorption ceilings, accessible tile systems and ceilings with ceramic finishes, etc. 68 pages of illustrated facts and figures. On Readers Service Card, circle 203.

CONCRETE

A brochure detailing the special insulating cushion properties of all-weather concrete is available from Silbrico. On Readers Service Card, circle 204.

DOORS/WINDOWS

Panic exit devices for public doors. Door hardware for public buildings is described in the VonDuprin 88 series Technical Bulletin. The devices in either steel, bronze, or aluminum are designed for left or right handed openings of heavy duty doors. On Readers Service Card, circle 205.

Aluminum clad wood windows. Low maintenance is claimed for Pella-Clad wood windows in a descriptive color brochure. Wide variety of styles is described with different methods for opening. On Readers Service Card, circle 206.

Bulletin 161 details complete line of rolling doors, fire doors, counter shutters, rolling grille and other metal doors. Dimensions tabulated and keyed to line drawings. Kinnear Corp. On Readers Service Card, circle 207.

Control of solar heat and glare with transparent Plexiglas acrylic plastic. 20 page color brochure showing typical installations, range of Plexiglas colors, and transmittance values

for reflected and absorbed heat and sunlight. Rohm & Haas. On Readers Service Card, circle 208.

Architectural Reflections. A full color pictorial brochure depicting history of esthetic applications of Kinney reflecting glass. Kinney Vacuum Division. On Readers Service Card, circle 209.

ELEVATORS

A 24 page illustrated brochure details performance and manufacturing characteristics of the OTIS VIP-260 System of passenger and freight elevators and escalators. On Readers Service Card, circle 210.

Series of 6 color brochures showing elevators for many different building types. Cab designs, dimensions, freight elevator information are all part of the package. Dover Elevator Division. On Readers Service Card, circle 211.

EMERGENCY POWER

Emergency power plants are described in a 12 page illustrated brochure from Onan Corp. Included are guidelines for selection and installation of equipment also other information of interest to architects—automatic load transfer controls and auxiliary equipment. On Readers Service Card, circle 212.

FLOOR COVERINGS

Contract carpeting from Creslan offers a 22 page report describing their range of carpets. This report is designed to assist architects in the selection of contract carpeting. On Readers Service Card, circle 213.

A fully illustrated brochure on acrylic carpeting with special emphasis on health care installations is available from Monsanto. Maintenance, flammability, static, and thermal insulation is explained. On Readers Service Card, circle 214.

Design World: a collection of Printed Carpets. Package includes beautiful color examples and details special features of these attractive patterns. World Carpet. On Readers Service Card, circle 215.

Complete catalog file in true color reproduction is available for LATCO featuring specialty and popular mosaic tile such as; Venezico, Valencia, Granada, Candysticks, many others. Latco Products. On Readers Service Card, circle 216.

FURNISHINGS

New office furniture from the Harter Metal Furniture Company is described in a detailed brochure—"360 Series."

This furniture is particularly intended for open office space. On Readers Service Card, circle 217.

HARDWARE

A 16 page guide with specifications of the Kirsch line of Drapery Hardware. A section on conventional drapery hardware and electric traverse equipment is also included. On Readers Service Card, circle 218.

Hospital door hardware, two unique mechanisms are described in this brochure from Hager-Hinge. One is a pivot hinge which uses a cam assembly to move the door laterally after moving in its opening arch. The other is a door stop and release which allows close tolerance swings. On Readers Service Card, circle 219.

Locks and door hardware. Drawings designed for architects to show installation of their locks on doors are available from Yale. Also simplified charts for specification. On Readers Service Card, circle 220.

A range of electronic locking units designed for today's modern entrance doors is described in a brochure from Lock Tronic. These locks are recommended for entrances to security and special safety areas. On Readers Service Card, circle 221.

Sargent & Company's 1971 condensed catalog. 20 page catalog describes full line of advanced architectural hardware including specifications and function charts. On Readers Service Card, circle 222.

Special 16 page catalog with information on LCN Door Closers. Includes surface mounted, overhead, concealed, and floor models. LCN Closers. On Readers Service Card, circle 223.

HEATING/COOLING

Brochures showing design flexibility of zoneline individual heating cooling system in residential high-rise with comparison of gas and electric systems. General Electric Co. On Readers Service Card, circle 224.

Architectural glass. A brochure for "Glass For Construction" gives selection tables and basic information of U values, shading coefficient, cooling and heating, load reduction, glazing data and other specifications on Architectural Glass. On Readers Service Card, circle 225.

A new color brochure containing complete specs and pictures on infinite access floor systems, duct-free distribution of conditioned air, etc. is available from Floating Floors,

Inc. On Readers Service Card, circle 226.

Fireplaces: Complete installation instructions are given in a brochure from Heatilator. Different types of installations are illustrated in a colorful brochure which also shows how to select components for custom built fireplaces. On Readers Service Card, circle 227.

METALS IN BUILDINGS

U.S. Steel; Information on "Cor-Ten" weathering steel. Available in a 16 page color brochure, developed specially for architects. On Readers Service Card, circle 228.

A series of illustrated brochures is available from the Niles Company illustrating their steel studs and joints together with charts showing their physical and structural properties. On Readers Service Card, circle 229.

An aluminum framing system which it is claimed can economically replace wood framing is detailed in a new publication "Alcoa's Alumiframe Building System." Construction of typical homes is outlined showing procedures for assembly of roof, floor and walls. On Readers Service Card, circle 230.

The Armco building system offers fast construction expandability and efficient use of space and materials. This system which in some instances may be portable, is described in a colorful brochure. On Readers Service Card, circle 231.

OUTDOOR LIGHTING

A varied range of lighting products is shown in bulletin 2826C from Crouse-Hinds. Contains illustrated information on large and medium area luminaires, post top and specialty area luminaires, architectural and accent lighting, flood lighting, facade, and sign lighting products. On Readers Service Card, circle 232.

PORTABLE CHECKROOM

A folding checkroom designed specially for use in hospitals, meeting rooms, commercial buildings, etc. is described in a brochure from Vogel-Peterson Company. It folds away when not in use. It has a capacity for 72 coats. On Readers Service Card, circle 233.

STAINS

Handsomely illustrated full-color booklet is a guide to stains and staining. Answers basic questions on types of stains, interior and exterior. Application techniques, hints for better results. Concise, easy to read, and well illustrated. Samuel Cabot, Inc. On Readers Service Card, circle 234.

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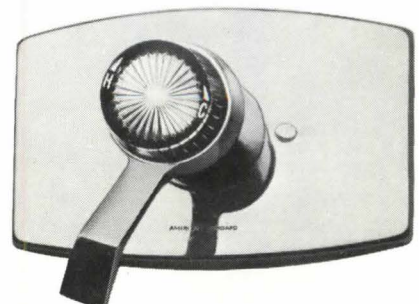
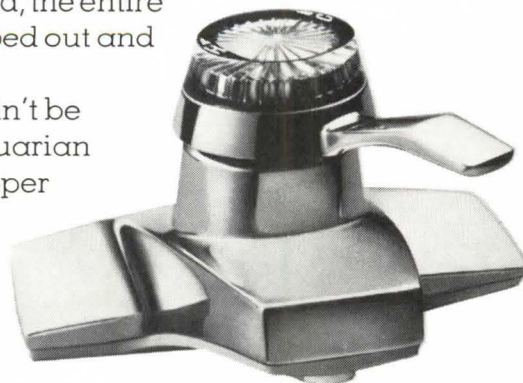
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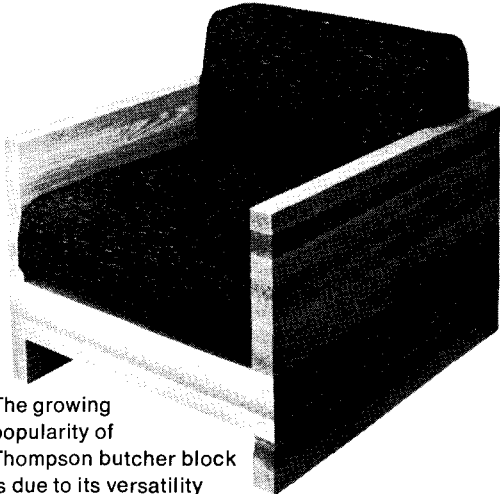


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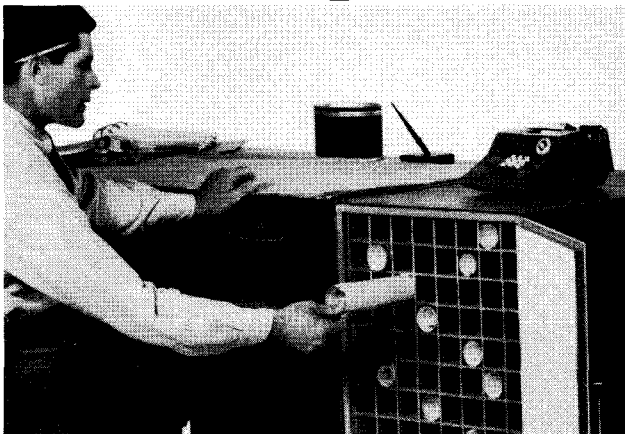


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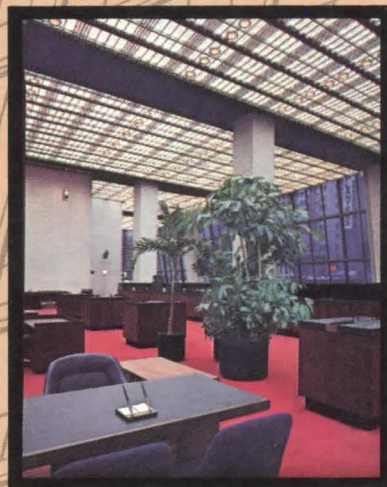
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